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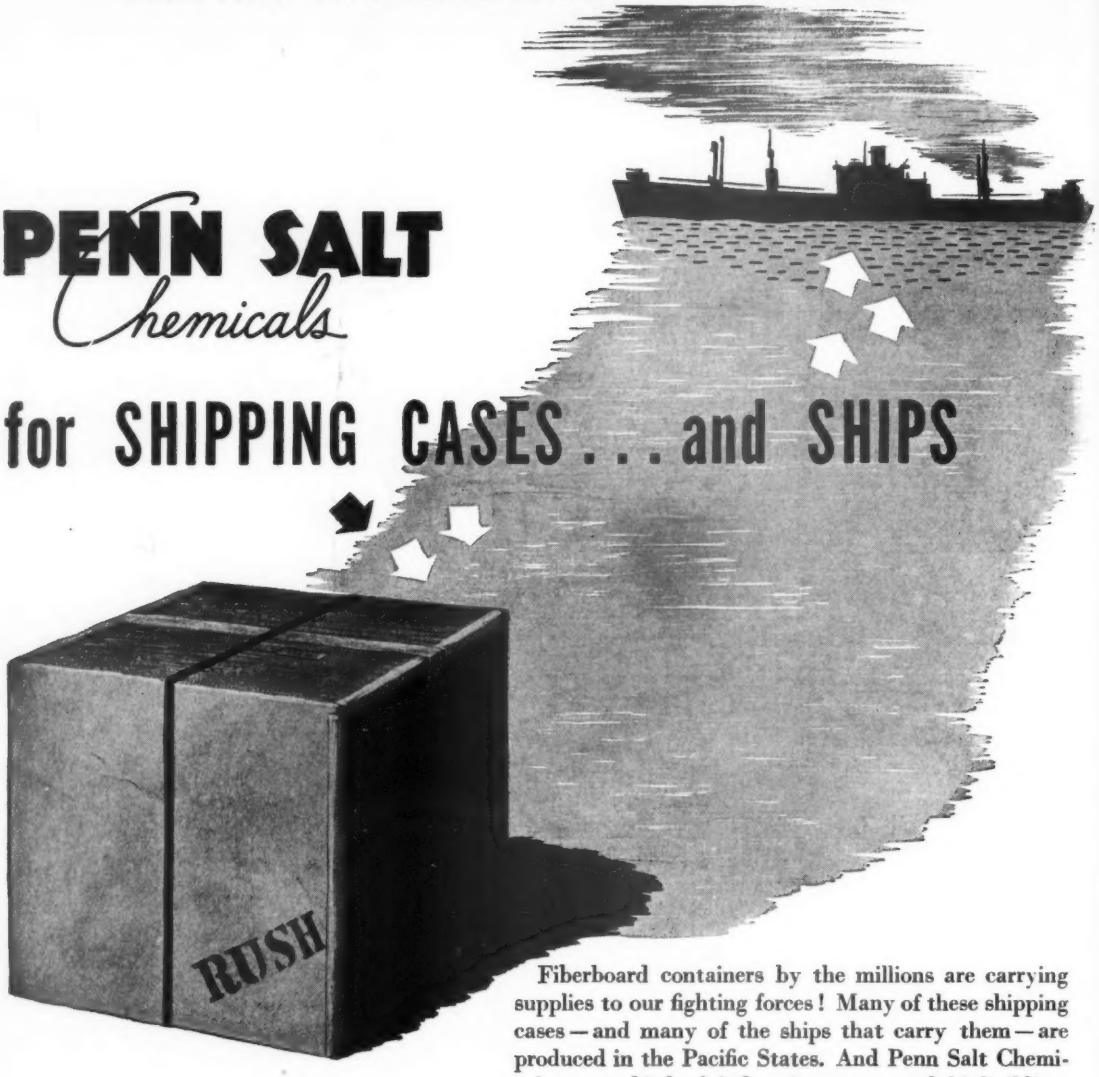

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MANUFACTURING CO. OF WASHINGTON
Chemicals
TACOMA, WASHINGTON

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THREE TOUGH MONTHS AHEAD *Editorials*

NEXT month will see the pulp and paper industry launched into the most critical quarter-year of its history.

If in early March there was a common denominator among the thinking of U. S. war production controlling agencies in Washington, that was it. The three months that lie just ahead are going to be tough ones, no matter how the war is going.

Of course, the industry has seen many a crisis through. This one differs because it involves the war — and the economic stabilization of foreign countries, a factor which will mean so much to our success in the peace.

Harold D. Boeschenstein, head of the Forest Products Bureau, returned recently from an overseas trip during which he conferred with top generals and high authorities and investigated current conditions. He brought back the uncompromising fact that the demands of the Army and Navy, as well as of the civilians in occupied areas, must be met to the limit of production.

What will the limit be? Conditions this past winter, from a production standpoint, turned out to be one of the worst in many years. Pulpwood in Canada and New England that normally would be ready for the mill is on the ground. Transportation got into a fine snarl, and the outlook even early in March was not promising.

While there has been a creditable gain in U. S. pulpwood consumption, most of it took place in 1944, and according to such a well-informed authority as Fred G. Stevenot, president of the Puget Sound Pulp & Timber Co., who was in New York for business sessions with pulp producers and consumers, "there is no relief from the hand-to-mouth basis yet in sight."

MORE RESTRICTIONS?

SOME quarters predict a gain in percentage of increase of military paper consumption of twice that of 1944. This coupled with the fact that Southern pulpwood cutting in the first quarter will fall 20 per cent below a year ago, further sharpens the gloom. Two results will be an intensification of waste paper collection efforts, and a further curtailment of paper containers for civilians by WPB. One bad feature of export is the very slight percentage of waste paper recovery in the war theaters or near-battle areas.

Whereas a few months ago there was thought that a gradual loosening of government controls might be possible, there is today not the slightest thought of such a move. Not even the reopening of the Shelton, Wash., mill of Rayonier Incorporated, will permit any modification of the recent order to all mills to cut down 5 per cent on pulp use.

POSTWAR JOB IS RIGHT NOW

"WE like to think of our postwar job as something we are getting ready to do every day, right now—not just something planned and talked about. Certainly what we are doing for the war effort, and what we are learning from doing those jobs well, mean improved products for our peace-time customers."

That is the postwar philosophy of E. C. Reid, vice president of American Writing Paper Corp., Holyoke, Mass., as expressed to a member of our staff. It's a practical philosophy.

"Nearly all of the hundreds of thousands of articles for the Army are wrapped in paper or require paper in some way."—Lieut. Gen. Brehon B. Somerville, commander of U. S. Army Service Forces.

U. S. State Department Won't Reveal Exports But FEA Expects Heavy Cut in Demands

● John W. Fuchs, U. S. State Department expert on pulp and paper affairs, takes the position that the amount of pulp and paper required by the liberated areas, and the names of the liberated areas, are the business of the State Department and nobody else.

The Mead Senate Committee, investigating shipments of newsprint abroad, and inquiring into other paper needs overseas, ran into Mr. Fuchs late in February and were told that he would not release the information wanted except on "formal request" and then only with the understanding that it be kept confidential. (Newsprint allocations of 5,600 tons to France and 8,600 tons to the Low Countries were recently revealed.)

The Foreign Economic Administration, supervised by the State Department, appears to hold the reins insofar as foreign demands of pulp and paper go — but the horse is not so much fractious as undernourished. "We are going to take the requirements of the occupied areas, and cut them down one-fourth for next quarter," said an FEA official, "and we have not the slightest hope of being able to get that one-fourth!" The reason is simply lack of supplies.

Some observers have been asking why more consideration has not been given to the possibility of shipping wood supplies from North Finland. The answer seems to be that full consideration has been given to this possibility and that the conclusion is negative. To imagine the conditions in the northern area we must imagine the New England woods of this winter—then add in our mind's eye an almost complete lack of logging equipment, port facilities all but destroyed, and a dearth of bottoms in which to haul even if the wood be transported to water.

Production of pulp and paper in war-ravaged Finland was only 26% of 1935 production during the third quarter of 1944, according to the U. S. Department of Commerce.

Indexes of Finnish cellulose and paper production for the first three quarters of 1944 were 52, 48, and 26, respectively, and the average for 1943 was 47 (1935 equals 100).

Mechanical pulp output (for sale) in the third quarter of 1944 was only 12,000 metric tons, of which only 8,000 tons were actually exported. During the corresponding quarter of 1943, 20,000 tons were produced, all of which entered the foreign market.

Production of chemical pulp declined from 90,000 metric tons in the July-September period of 1943 to 60,000 tons in the like months of 1944. Exports which amounted to 45,000 tons in the third quarter of 1943 dropped to half that amount in the corresponding period of 1944.

The paper industry sustained the greatest production cut, third-quarter output amounting to only 60,000 tons compared with 100,000 tons in the comparable quarter of 1943. Exports of paper dropped from 80,000 metric tons in the third quarter of 1943 to 20,000 tons in the corresponding months of 1944.

Russian Assistance?

● Assistance from Russia for liberated European countries also has been suggested by congressmen. Government officials in Washington, however, say that Russia is willing, but is busy and has too great a reconstruction problem of her own to contend with.

A representative of PULP & PAPER INDUSTRY found ample evidence that both Department of Commerce and FEA officials had been familiarizing themselves with the condition of the Leningrad railroad, the facilities of Narvik, the temperatures of the forests of Finland.

Meanwhile, the U. S. industry has benefited in a small way by receiving shipments of Russian pulpwood of high quality. These shipments are not expected to reach high volume during the war, but it is recalled that Marshal Stalin and other Soviet officials told Wendell Willkie and Eric Johnston they are anxious deliver pulpwood to this country. It would certainly be welcomed by mills in both the East and on the Pacific Coast. About a year ago a previous small shipment of barked Russian wood went to a mill in northern New York.

F. D. TAYLOR (left), has been appointed Manager of the new 200-ton unbleached sulphate pulp mill built at Red Rock, Ont., by Brompton Pulp & Paper Co. He has been with Brompton 14 years. Previously he was for three years mill chemist at the Hawkesbury mill of Canadian International Paper Co.

V. R. MACKEY (right), has been appointed Purchasing Agent and Traffic Manager for the Red Rock Division, which replaces an old sulphite operation and represents a new investment of $6,000,000.

H. A. F. GREGORY, recently appointed General Superintendent of the East Angus mills of Brompton Pulp & Paper Co., Montreal.

Eisenhower's Wish

● Opposition to France's demands for newsprint and other paper might as well rest easy — because France is going to get a certain amount of paper and paper products from the United States for some time to come. This is the opinion of a well-informed source in the industry who says the demand comes through General Eisenhower himself, not for the Army, but for the French. Reason given, according to this authority: task of the Army is made much simpler if French are kept employed in all phases of activity. Otherwise, unemployment and unrest, with resulting unfavorable comparison of U. S. occupation with that of the Germans.

On top of this, another industry leader in New York predicts that bogged-down woodlands operations will close many non-integrated mills in the U. S. to three days a week during the second quarter of 1945—with resulting loss of labor which will drift to full-time industries. A report current in Washington is that the Army is growing impatient of demands by large consumer magazines (not newspapers) and is more and more inclined to cut down in that field.

Italian Newsprint Problem

● In Italy the newsprint problem is causing no end of political commotion.

The Italian National Press Commission tried to solve the problem by suspending publication of six infant newspapers, and promptly discovered that the doctrine of a free press does not permit such tactics.

The Allied Commission let it be known that official representations would be made to the Italian government unless the order was revoked.

The six newspapers affected were among eight to which authorization was granted by the press commission in early February.

Fourteen other daily papers authorized last year, most of which are organs of political parties, would be permitted to continue publication under the order. All suffered a 33 per cent cut in paper ration.

The paper shortage is so critical that Naples' newspapers ran out of newsprint and none appeared for two days.

Sweden

● Opinion is still divided on Sweden's role in the world pulp market. As readers well know, there have been representatives of Sweden in the U. S. who say that she is ready to ship 600,000 tons from stock, and maybe more, as soon as weather permits. There are doubters here—and especially are there doubters that Sweden will be much of a factor on the long pull, postwar. They reason that Sweden has more thoroughly developed her facilities for papermaking, hence will be using more of her own supplies, notwithstanding the fact that she will want to trade.

One official adds this interesting comment: "It seems inconceivable that the United Nations will allow Sweden, who has successfully and profitably avoided the war, to ship pulp to other countries, especially to our former enemies, without some control." Late in February, sizable samples of Swedish woodpulp reached New York selling agents in New York City. One company received a small sample of 50 pounds, representing about 12 grades from four different mills. Qualities appeared to be better than before the war. Enough of the pulp reached the U. S. to enable experimental runs on viscose and acetate rayon which are said to have turned out so well that at least one U. S. company has placed an order on reserve. How the pulp samples reached this country remains a mystery.

Sweden Blockaded

● For the time being Sweden is in no position to help out in Europe, according to the American-Swedish News Exchange in New York. It said:

"Sweden is now living within a blockade which is tighter than at any time since the war began. During the fall of 1944 steps were taken which brought the trade with Germany to a virtual standstill, and for 1945 no trade treaty has been negotiated, as no important exchange of goods is contemplated. In January the so-called safe-conduct traffic with overseas countries, which represented Sweden's 'life-line to the West,' was also interrupted. Uncertainty as to future German action caused the Swedish authorities to halt temporarily this traffic, by which a limited number of Swedish freighters had been able to pass through the Skagerrak blockade with the consent of both sides in the war. At present Sweden's most important exports are made up of relief shipments to Finland, Norway and the Netherlands, but these bring no imports in return. Trade with Russia is still in the initial stages.

"In the past, Germany's consent to the safe-conduct traffic has been tied, at least formally, to the annual German-Swedish trade treaties. Four home-bound safe-conduct ships, which had arrived at the British control station in the Faroe Islands, have been ordered by the Swedish authorities to remain there until the situation is clarified. For each ship that enters Gothenburg a ship of corresponding size and type must come out."

State Department Report on Scandinavia and Russia

● The following report by Grant Olson of the U. S. Legation in Stockholm, released through the Department of Commerce, that Sweden ought to be able to supply a large portion of the demand for pulp and paper in liberated European countries if — and when — the ship blockade is broken and ship bottoms are available (conditions being disputed currently by the State Department and certain Congressmen):

"Disposition of the wartime accumulation of wood pulps stocks is the most pertinent problem Swedish millmen face in the future. Despite drastic reductions in output, chemical pulp inventories exclusive of fodder cellulose, at the end of September 1944, were officially reported at 550,000 metric tons. Unofficial sources say present stocks are still greater, possibly about 600,000 metric tons (661,500 short tons).

"The already acute storage problem increases in magnitude. Warehouses are bulging with unaccustomed surpluses, and it has been necessary to use numerous small ships to store part of the excess. It is said that were it not for this form of stock piling, many Swedish mills would be unable to continue operating.

"In the meantime, England is the only country with which Sweden has so far been able to conclude definite contracts for post-war delivery of wood pulp. These cover individual British purchases totaling about 275,000 metric tons of chemical pulp and 100,000 metric tons of mechanical pulp (a total of 413,000 short tons).

"United States, French, and Netherlands interests have expressed the desire to negotiate purchases of pulp for delivery after the war but apparently have not gone so far as to stipulate exact quanities or prices at which they would be willing to accept delivery. This has caused no little concern among Swedish pulp manufacturers who are anxious to resume normal trade relations with their important pre-war foreign markets.

"United States ceiling prices are said to be the primary source of uneasiness with regard to American-Swedish pulp trade, some Swedish circles having intimated they consider such prices too low, particularly if they must sustain freight and insurance costs.

"Nevertheless, it is reliably reported that several Swedish steamers are now loading woodpulp in Baltic ports for transfer to Goteborg and Varberg on the west coast in preparation for the time when North Sea and Atlantic blockades are lifted and regular shipments to oversea markets can be resumed.

"Sweden's industrial capacity for the production of sulphite pulp was estimated in 1943 at 1,720,000 metric tons (1,894,000 short tons), 520,000 tons of which could be in viscose, high alpha, and purified pulp grades, and the remainder of 1,200,000 metric tons in paper grades. Sulphate capacity in 1943 was estimated at 1,210,000 metric tons (1,334,000 short tons). On the basis of these capacities the industry announces that it hopes to achieve a monthly production of about 200,000 metric tons (220,500 short tons), as soon as market conditions permit resumption of relatively full-scale operations.

Pulpwood Sufficient

Pulpwood supplies are said to be fully equal to the requirements of the industry, and stocks of July 1, 1944, were reported at 26,600,000 cubic meters (7,160,000 cords). Approximately 15,000,000 cubic meters were cut during the fiscal year ended June 30, 1944, as compared with average annual prewar production of 12,600,000 cubic meters.

During the war Germany has received certain quantities of pulpwood from Sweden, but there are no figures available to indicate the exact amount involved.

Exports of wood pulp to Germany and the European Continent continued on a very low level in 1944. Total shipments, including those small amounts of chemical grades carried by safe-conduct ves-

sels, amounted to only 246,000 metric tons, dry weight, up to the end of September. (Exports of the calendar year 1939 totaled 2,331,000 metric tons.) Sulphite pulp, the largest single item, totaled 172,000 metric tons while sulphate and mechanical pulps aggregated 67,000 metric tons and 7,000 metric tons, respectively. The decision of the Swedish authorities in September to close territorial waters in the Baltic Sea to foreign merchant ships reduced even further the possibility of trade in wood pulp with the European Continent.

Paper Output Satisfactory

● The situation with regard to paper seems a little brighter, and mills have been able to maintain a fairly steady rate of production. Tremendously increased home consumption during the war has undoubtedly contributed much toward keeping the industry going and one competent observer recently reported that he had never seen anything to compare with the way paper napkins, paper tablecloths, paper sheets, and hand towels are used there with complete abandon.

Newsprint, fine paper and kraft paper production is said to be progressing satisfactorily, and agreements were concluded in December between the Association of Swedish Newspaper Publishers and the Swedish Newsprint Mills Association for delivery during 1945 of approximately 80,000 metric tons of unglossed newsprint.

As of the middle of September, almost all Swedish shipments of paper in 1944 had been on consignment to Germany. These exports which consisted chiefly of kraft spinning paper amounted to 31,000 metric tons up to August 15. Orders for 15,000 tons more of kraft spinning paper were received soon after that time.

Denmark is reported to have purchased limited papers and paperboard from Sweden late in November, and Switzerland and Portugal took small quantities of various grades of paper. Exports via safe-conduct traffic to transoceanic markets averaged about 10,000 metric tons per month during the first 9 months of 1944.

Other Countries

● Little official information is available concerning pulp and paper prospects in other North European countries. The idea that Russia might absorb the major part of Finnish pulp output has been widely publicized. However, it is believed that Russia is more interested in receiving reparations in the form of machinery and ships than in timber, wood pulp, and newsprint. This seemingly falls in line with Russia's general policy of building up its own industrial capacities, but since no definite agreements have been made in this direction, any general assumption at this time would be inadvisable. On the other hand, it is quite possible that exports of relatively large percentages of Finnish pulp and paper to world markets may be made for the foreign exchange benefit of Russia.

Norway is still in a state of enemy occupation, and as such its pulp and paper future must remain a matter of conjecture. It seems plausible, however, that at least one or two years will be required to reestablish the industry on anything like a normal basis.

New Wood Hydrolysis Plants In Russia

● The Moscow press reports that Soviet Russia has four new hydrolysis plants in the East which produce 2,112,000 gallons of alcohol annually from sawdust. The capacities of these plants are being increased to 5,250,000 tons.

Two other wood hydrolysis plants at Leningrad and Stalingrad, destroyed by the Germans have now been restored to activity. These produce yeast and other edible products as well as alcohol. Most of the equipment for these plants, it is said, was manufactured in the Soviet Union, although some came from the U. S. via Lend Lease.

Pulp Production Near Record in 1944

● For the third time in history, U. S. pulp production went over the ten million ton mark in 1944. Despite increasing shortages of manpower and material, the 1944 production of 10,088,890 tons was almost a half million tons over 1943. It compared with the record year of 10,783,000 tons in 1942 and 10,375,000 tons in 1941. In the 15 years prior to the war, production had slowly increased from about four to nearly seven million tons annually.

U. S. PULP PRODUCTION AND CONSUMPTION—1943-44[1]

By Bureau of the Census

(Tons of 2,000 pounds)

Type of wood pulp	Production		Consumption in the manufacture of paper and paperboard	
	1944	1943	1944	1943
All types	10,086,890	9,657,914	10,495,734	10,612,772
Groundwood	1,557,681	1,556,810	1,750,650	1,768,018
Sulphite fiber, total	2,386,149	2,436,502	2,518,590	2,891,719
Unbleached	862,928	883,306	1,241,966	1,449,419
Bleached	1,523,221	1,553,196	1,276,624	1,442,300
Sulphate fiber, total	4,548,810	4,235,724	4,603,318	4,430,098
Unbleached	3,739,602	3,486,535	3,733,486	3,583,851
Semibleached	144,262	147,040	156,085	163,066
Bleached	664,946	602,149	713,747	683,181
Soda fiber	412,755	418,868	418,442	455,892
Semichemical, off-quality, screenings and miscellaneous	540,380	405,309	585,126	457,469
Defibrated, exploded, asplund fiber and similar grades[2]	641,115	604,701	639,608	609,578

[1] Data for 1944 are preliminary. Data cover all known mills and were compiled from reports received by the Pulp Allocation Office of the War Production Board.

[2] This classification covers pulp manufactured by such recently developed processes as wet refining, steam explosion and dry pressing in hammer mills. The pulps produced by these processes are used in the manufacture of high strength papers (such as building papers) and boards.

Dan K. Brown, Reelected APPA President, Cautions Industry on Over-Expansion and Foreign Trade

● Government controls over imports and exports "for some time" to come are foreseen by Dan K. Brown, president of Neenah Paper Co., who on Feb. 21 was re-elected to a second term of one year as president of the American Paper & Pulp Assn. Cola G. Parker, president of Kimberly-Clark Corp., was re-elected first vice president.

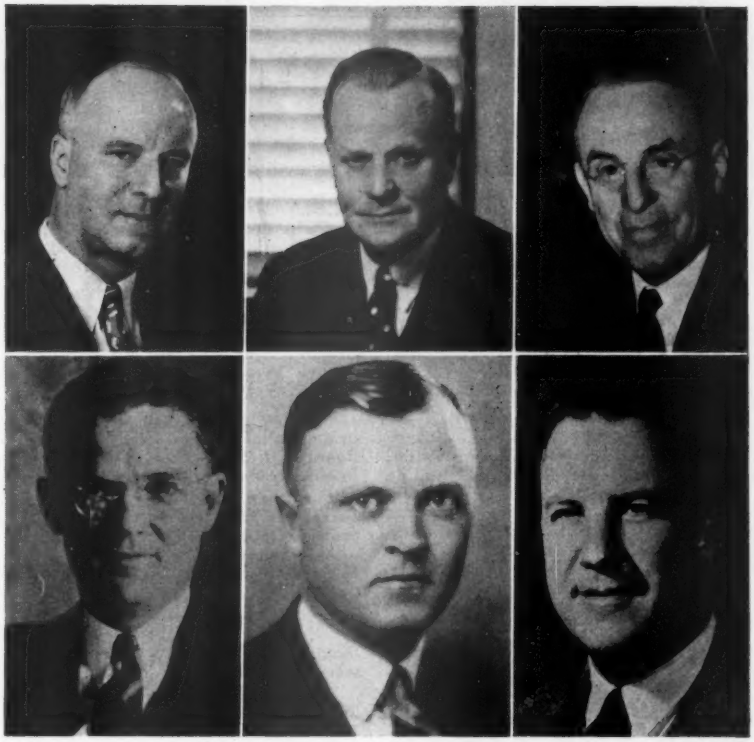
In his first annual report to the association, Mr. Brown warned that these controls might be extended unless the industry organized for full employment and "balancing of our international account." He also cautioned against postwar "over-expansion without full investigation as to the assurance of a continuing wood supply."

Apparently referring to the postwar forecasts which were outstanding features of the last two issues of PULP & PAPER INDUSTRY (the Housley report on future paper demand in January and the Department of Commerce forecast of world requirements in February), Mr. Brown said:

"Reports have recently been published by certain agencies regarding the probable demands for our products in the years immediately following the end of the war, which statements might be construed by financial institutions and the investing public as warranting large expansion of our industry. It is not my intention to contradict these statements except to caution the industry against over-expansion without full investigation as to the assurance of a continuing wood supply therefor, as it is conceivable that legislation and other regulations on cutting of forest lands may result in setting a limit thereon at an amount which could be consumed by presently existing equipment.

"Due to growth of population and the pent-up demand for our own civilian requirements as well as new uses for our products, it quite possibly justifies a reasonable extension of our facilities; but it would be a calamity if we were to over-expand to meet conditions which may not be of long duration."

He gave warm praise to the "splendid leadership" in the Forest Products Bureau of the War Production Board and to "the broad acceptance by the integrated mills of the policy which resulted in the diversion of pulp to the converter mills."



AMONG ASSOCIATION OFFICERS ELECTED OR RE-ELECTED FOR THIS YEAR:

Upper row (left to right): D. K. BROWN, President, APPA; OLIVER M. PORTER, Executive Director, U. S. Pulp Producers Assn., and NORMAN W. WILSON, Middle Atlantic Director for the U. S. Pulp Producers Assn.

Lower row (left to right): ARNOLD B. HUYSSOON, a Director; C. V. MAUDLIN, Sec'y-Treas., and THOMAS V. MORRISS, Vice Pres., all three for the Assn. of Pulp Consumers, Inc. Mr. HUYSSOON was Director of the Paperboard Division, Forest Products Bureau, War Production Board, from July 1944 to January 1945.

Tinker Proposes Program

● Nine points calculated to stabilize U. S pulp and paper demands were offered members of the APPA at its restricted "wartime" annual meeting in New York's Waldorf-Astoria on Feb. 19, 20 and 21. Embodied in the annual report of E. W. Tinker, who was re-elected executive secretary, they are:

1. Recognition by Congress and the Selective Service of the importance of farm labor to pulpwood production.

2. Assistance by the War Manpower Commission in the matter of labor referrals.

3. Making available by the War Department as rapidly as possible as many war prisoners as the industry can absorb.

4. Continuation by WPB of its policy of making available equipment for wood procurement purposes.

5. Congressional enactment of legislation extending the Timber Production War Project.

6. Abandonment by pulpwood producers of any unduly restrictive specifications that might interfere with maximum pulpwood procurement.

7. Adoption of improved mechanized methods.

8. Coordination by pulpwood producers of individual contractors.

9. Continued support of the war activities committee of the Pulpwood Consuming Industries.

Failure to take the nine steps would result in a breaking up of the relative stability which characterized the industry in 1944, Mr. Tinker said. Pulpwood production in December, 1944, was 10.4 per cent below that of the corresponding month in 1943, he pointed out, adding that the decline in pulpwood receipts since last December has been marked and is "rapidly gaining" although statistical confirmation is not available at this time.

He believed that 16,000 additional workers are neded to meet the domestic goal of 16,000,000 cords of pulpwood in 1945 and restore inventories to the December, 1942, levels. Reduction in waste paper and wood pulp inventories are also threatening factors, the meeting showed.

Mr. Tinker urged that FEA cease exporting paper stock and that the salvage division of WPB be continued with more adequate staffs if necessary.

The following additional APPA vice presidents were elected:

Hugh J. Chisholm, Oxford Paper Co.; R. K. Ferguson, St. Regis Paper Co.; P. H. Glatfelter, P. H. Glatfelter Co.; J. H. Hinman, International Paper Co.; D. S. Leslie, Hammermill Paper Co.; David L. Luke, Jr., West Virginia Pulp and Paper Co.; R. A. McDonald, Crown Zellerbach Corp.; J. L. Madden, Hollingsworth and Whitney Co.; Dwight L. Stocker, Michigan Paper Co.; George R. Wallace, Fitchburg Paper Co.; R. B. Wolf, Pulp Division, Weyerhaeuser Timber Co., and J. D. Zinc, Strathmore Paper Co.

Pulp Producers Officers

The U. S. Pulp Producers Assn. elected Amor Hollingsworth of Penobscot Chemical Fibre Co. and Tileston &

WALKER HAMILTON (left), WAS DOUBLY HONORED LAST MONTH. He was elected President of the Assn. of Pulp Consumers, Inc., and Reigel Paper Corp. promoted him to Executive Vice President and General Manager. With Reigel since 1921, he was Purchasing Agent, then Secretary and since 1936 has been a Vice President.

To his left above: R. A. McDONALD, Executive Vice Pres. for Sales, Crown Zellerbach Corp.; EDWARD BARTSCH, President, Rayonier Incorporated, and DWIGHT L. STOCKER, President, Michigan Paper Co. of Plainwell. Mr. McDonald and Mr. Stocker were elected Vice Presidents of APPA and Mr. Bartsch was chosen a Director-at-Large of the U. S. Pulp Producers Assn.

Hollingsworth Co. as regional director for New England; Norman W. Wilson, of the Hammermill Paper Co., Middle Atlantic director; Stuart E. Kay, International Paper Co., director for the South; Stuart B. Copeland, Northwest Paper Co., director for the Lake States, and Robert B. Wolf, Weyerhaeuser Timber Co., West Coast director.

Directors at large elected were Alexander Calder, Union Bag & Paper Corp.; Downing P Brown, Brown Co.; J. M. Conway, Hoberg Paper Mills; U. M. Dickey, Soundview Pulp Co.; Edward Bartsch, Rayonier, and Lawson Turcotte, Puget Sound Pulp & Timber Co.; Oliver M. Porter was again elected executive director.

Pulp Consumers

Walker Hamilton, vice president of the Riegel Paper Corp., was elected president of the Association of Pulp Consumers, Inc., at a directors' meeting.

Thomas E. Morriss, vice president of Central Fibre Products Co., was chosen vice president, and C. V. Maudlin was re-elected secretary-treasurer.

The following new directors were elected: C. M. Forman, Ohio Boxboard Co.; Arnold B. Huyssoon, Continental Paper Co.; E. R. Leonhard, Paterson Parchment Paper Co.; Paul F. Moore, Westfield River Paper Co.; Robert B. Stevens, Stevens & Thompson Paper Co., and W. B. Zimmerman, Maxwell Paper Co.

The foregoing directors will serve with the following directors whose terms continue through the coming fiscal year: Maxwell D. Bardeen, Lee Paper Co.; F. E. Brown, Manchester Board & Paper Co.; George Ferguson, Watervliet Paper Co.; L. J. Long, Crystal Tissue Co.; George F. Moxley, West Jersey Paper Co.; Wm. M. E. Roberts, Fox River Paper Corp.; Austin Story, Chilliclothe Paper Co., and President Hamilton and Vice President Morriss.

Other Elections

● The Writing Paper Manufacturers Assn. executive committee elected H. H. Hanson of W. C. Hamilton & Sons, president; M. D. Bardeen of Lee Paper Co., and W. J. Garrity of Munising Paper Co., vice presidents, and reelected Morris Dobrow executive secretary.

The Tissue Association elected Joel F. Hartman of Barclay Tissue Corp., president. The Specialty Paper and Board Affiliates chose S. B. Sutphin, Beveridge Paper Co., president.

The Sulphite Paper Manufacturers elected E. W. Kiefer, Port Huron Sulphite & Paper Co., as general chairman, with Wayne Brown, Crown Zellerbach Corp., heading the Machine Glazed Group.

Paul A. Mahoney, International Paper Co., was reelected president of the Groundwood Paper Manufacturers Association.

The News Print Assn. elected Harold Smith president and John Hobson and J. E. Zellerbach vice presidents, with E. O. Merchant continuing as executive secretary.

Arthur Bloch Dies

● Arthur Bloch, 77, former executive of Zellerbach Paper Co. and brother of Louis Bloch, chairman of the board, Zellerbach Paper Corp., died in late January in San Jose, Calif.

Hamilton Heads Riegel; Fred Jacoby Now Vice Pres.

● Walker Hamilton has been elected executive vice-president and general manager of Riegel Paper Corp. Mr. Hamilton joined Riegel Paper as purchasing agent in 1921, became secretary in 1929, and since 1936 has been a vice president.

His promotion was accompanied by those of Fred I. Jacoby, general superintendent, who is now a vice president, and Frederick Leinbach, who becomes assistant to the general manager. George C. Borden, Jr., acting technical director, was appointed technical director and continued as coating department manager. A. W. Osborn was appointed coating department superintendent.

Kraft-Wrapped Coal Is New Paper Use

● Blaw-Knox Co. is erecting a plant to be known as the White Glove Packaged Fuel Division of the company which will produce coal briquets packaged in paper to be burned with the wrapper intact. The plant, according to word received by PULP & PAPER INDUSTRY from James L. Mooney, sales manager of the process fuel department, will be located at 17th St. and Sedgley Ave., North Philadelphia.

The company is now discussing its paper requirements with several suppliers both in the middle west and the east. Requirements are: approximately 600 tons of 60-lb. Kraft in rolls of 20½ inches wide and preferably in fire-brick red color.

Rivers Joins Peru Industry

● Further evidence of South American activity is seen in appointment of Roy Rivers of Cornell, Wis., to the Sociedad Agricola Paramonga, LTda., Hacienda Paramonga, Peru.

Mr. Rivers, who has wide experience in the U. S. as paper mill superintendent, was in New York recently after a considerable time in Brazil with the Industrias de Papel Samao, Rua do Manifesto, 391 San Paolo, Brazil. He is an active member of the Superintendent's Assn.

AMONG THOSE ELECTED BY THE U. S. PULP PRODUCERS: AMOR HOLLINGSWORTH (left), President, Penobscot Chemical Fibre Co., Director for New England, and U. M. DICKEY, President, Soundview Pulp Co., Director-at-Large.

Two Important Developments For Mass Circulation Magazines

● In a letter to PULP & PAPER INDUSTRY, commenting on recent moves of the Time-Life group to acquire paper, N. B. Wallace, production manager of Time, Inc., said:

"It is true that we expect that the circulation of both Time and Life will be considerably increased after the war. We have tentative orders for printing presses and necessary equipment for taking care of the manufacturing problems, which will arise, already placed.

"We know too that we will need a great deal more paper than we have used in the past although we have not made definite commitments for all of the tonnage which will be required. We have entered into an agreement with Crown Zellerbach for what printing we will do on the West Coast and of course we have our current contract with our present suppliers. Some of the present suppliers will be able to give us more tonnage while others may not wish to do so, but it is impossible to say right at the moment where all of the extra paper will be found.

"The purchase of the Bryant Paper Co. has very little to do with the postwar picture although it might be considered insurance against the time of emergency and it will most certainly give us an opportunity to do some research which we would like to carry out."

Mr. Wallace has been made a vice president and board member of Bryant Paper Co. Charles Stillman, vice president of Time, becomes board chairman and director of Bryant.

Alan B. Milham continues as president and general manager at Bryant and P. H. Gideon remains as secretary-treasurer.

● Two announcements by Time Inc., during the past month are of important potential hearing on postwar paper trends:

1. Time has purchased the Bryant Paper Co. of Kalamazoo, Mich., for about $2,300,000. The company, long prominent in the coated papers field, has seven Fourdrinier machines, with trim sheet range of from 112 to 152 inches (two Beloits, two Hornes, one Beloit-Horne combination, one Black-Clawson, one Pusey-Jones). This company has been a leader in recent coated paper mass production experiments and developments.

2. Time, which has contracted with Crown Zellerbach Corp. for western circulation paper, has joined with Pacific Coast printers in purchase of a 15-acre site in Vernon, Los Angeles, for a modern printing plant to handle printing of Time and other national magazines for western circulation. About $2,000,000 will be invested.

BOURDON W. SCRIBNER (right), Chief of Paper Section, National Bureau of Standards, Washington, D. C., receiving the TAPPI Medal for 1945 at a small luncheon held in his honor at the Commodore in New York Feb. 19.

Presenting the medal in behalf of TAPPI is MAJOR JAMES D'A. CLARK, U. S. Army Quartermasters Corps, who has been in charge of packaging research for the army.

Congressmen Would Turn Back Clock

● Apparently totally unaware of the fact that their proposal would turn back the clock for the U. S. pulp and paper industry about 40 years, Rep. Francis Case (R) of South Dakota, has offered a resolution calling for a Congressional investigation of the possibility of making the United States self-sufficient in production of newsprint and other paper, and Rep. Lyle H. Boren (D) of Oklahoma says his newsprint investigating committee will undertake the job.

The so-called Boren committee toured U. S. and Canada from coast to coast last year, but apparently in all that traveling and visiting of mills, they failed to learn that the U. S. depends on Canada for 80% of its newsprint and has received by far the greater part of its newsprint from the north for twenty years.

More and more U. S. mills are changing over to better grades of paper that draw higher prices. With high cost and scarcity of pulpwood, high labor costs, etc., U. S. mills, for the most part, cannot afford to even consider making newsprint. Why should they, when there is plenty of demand for other grades?

The newspapers of the country are very much aware of paper shortages today and the congressmen are their sounding boards. When the U. S. pulp and paper industries needed help in critical years before the war, the press was silent.

Will Cut Paper 5%

● The U. S. War Production Board reported, after meetings on Feb. 28-Mar. 1 of the printing and publishing industry advisory committee, that a five per cent cut in deliveries of newsprint and other paper from mills probably would be necessary in the second quarter of 1945.

However, a survey of paper inventories indicated consumption quotas during April, May and June could remain unchanged for newspapers, magazines, books and commercial printing.

J. Hale Steinman, director of the Printing and Publishing Division, Forest Products Bureau, WPB, said publishers having large supplies have expressed willingness to loan paper to publishers whose inventories are low.

James Killen, labor consultant to the Paper Division, warned that it may be necessary hereafter to fix quotas according to the essentiality of the product produced from the paper, in deviation from previous policy of making cuts apply proportionately to all consumers. However, this would not apply to the printing trades, since WPB's policy has never attempted to dintinguish relative essentiality of published matter.

THIS SHOULDN'T BE—BUT IT IS—A MIGHTY RARE SCENE in the pulp and paper industry. Left to right: MAJ. ROY HICKMAN, Birmingham Ordnance Div.; DENNIS E. COUSINS, Mill Mgr.; LT. COMMDR. J. W. KLINE, USNR, and JAMES L. MADDEN, Vice President, unfurl "E" pennant at Hollingsworth & Whitney Mobile, Ala., Mill.

HIGH HONOR FOR MOBILE MILL

Production of Shell Container Paper Wins "E" for Hollingsworth & Whitney Co.

AT A paper industry meeting in Appleton, Wis., only a few months ago the comparative virtues of sulphite and sulphate pulps—qualitywise and economywise—were being debated. One Northerner, an expert speaking to a room full of experts, cited the Hollingsworth & Whitney mill in Mobile, Ala., as an example of a Southern mill which has raised the quality of its kraft products to a point where it compared favorably with anything achieved in the North.

On Feb. 16 the U. S. Army and Navy dramatically and emphatically endorsed that Northerner's respectful tribute to a mill which competitors freely admit is one of the best all-around operations in the South.

On that day, in fitting ceremony, the Chickasaw Mills of Hollingsworth & Whitney Co., at Magazine Point, Mobile, became one of the few paper mills to unfurl an Army-Navy "E" pennant. It is the first Southern mill and the first kraft mill anywhere to win this award.

[According to our records, this is the second primary or integrated mill to win the "E." The first was Hammermill Paper Co. A few paper companies, including Neenah Paper Co. and Container Corp. have won "E's" and so has the lumber division (neighbor of the pulp division) at Longview, Wash., of Weyerhaeuser Timber Co.]

The award to the men and women of the Chickasaw Mills was specific recognition for their development and production of a special shell container paper. In the past two years this has comprised a substantial portion of the mill's output. The paper is shipped to various ammunition container plants where it is converted into cylindrical containers for shipping shells overseas. Each shell has its own container.

Top officers of Hollingsworth & Whitney, owners of a sulphite and a groundwood mill in Maine as well as the sulphate operation at Mobile, are M. L. Madden, president; Harry C. Thayer, treasurer; L. G. Glazier and James L. Madden, son of the president, vice presidents, and Robert Nivison, manager of mills. Central headquarters are in Boston.

Dennis E. Cousins, former manager of a kraft pulp mill at Tacoma, Wash., is manager at Mobile. Last November he was joined as assistant manager by Edward P. Wood, who had been a technical director of the Longview, Wash., mill of Weyerhaeuser Timber Co., superintendent of a mill in India and chief chemist at the Parsons mill in West Virginia. A third ex-Pacific Coast man is Laurence Bushell, chief electrician.

C. A. Redden, chief engineer, was directly responsible for development of the shell container paper, aided by Hollingsworth & Whitney technicians and chemists.

Many of the 650 employes were continuing on their jobs while the ceremonies were held.

Maj. Roy D. Hickman, chief of the Birmingham Ordnance Division, presented the flag to Vice President Madden, after a speech in which he praised the development of the shell container paper. He observed that only 4% of all plants engaged in war work have won "E's."

Mr. Madden, receiving the pennant in the place of his father, who was unable to attend, observed that half of the company's male em-

ployes — over 300 men — were in uniform. He said:

"I am going to make a promise that we consider this award as a symbol of our obligation not only to maintain, but to better our production."

Incidentally, Vice President Madden had only a few months ago completed a critical year of service in charge of pulpwood production in the entire country for the War Production Board and last month he was honored in New York by being elected a vice president of the American Paper & Pulp Assn.

Commenting on the award, Mr. Cousins said, "it represents a recognition of the production of the high strength papers for which this mill was designed, but is primarily a tribute to the skill of our employees and their fine achievement under the difficulties of wartime conditions. We are justly proud of the loyalty and industry of our employees in all departments.

"It is also significant to keep in mind," he added, "that the earning of the award would not have been possible without the splendid cooperation of our woods organization, responsible for maintaining a consistent supply to the mill of pulpwood."

The Mobile Operation

● In its northern mills H & W company manufactured specialty papers for exacting industrial uses. It developed to a large extent papers which necessitated the use of imported Scandinavian kraft pulp. It soon became evident that the demand for a strong high quality kraft pulp was large and growing. Meanwhile developments and improvement in the utilization of southern pine pulp convinced H & W officials that they could produce these high quality specialty products in the South. Most of the earlier mills using southern pine had been designed to serve the demand for high production rather than quality markets. Following extensive study and research a satisfactory process was selected that assured the production of high quality papers from southern pine and it was decided to build a mill at Mobile.

The Chickasaw Mills include a pulp mill, pulp-drying machine, bleach plant, 184-in. Fourdrinier paper machine and 124-in. cylinder paper machine, and all necessary accessory equipment. The plant has a daily capacity of approximately 225 tons of sulphate pulp, both bleached and unbleached.

Description of Equipment

● The Chickasaw Mills, built and completed just before war, have proved an interesting operation to many other operators from the North and the Pacific Coast. These men have visited the Mobile plant to see the pulp making, bleaching and papermaking equipment.

The Chickasaw mills went into operation in the autumn of 1940.

The bulk of the ammunition container stock—the product for which the "E" was specifically awarded—was made on the 124-inch cylinder

OUR COVER PICTURE . . .

Shows Lt. Commdr. J. W. Kline, representing the Army and Navy, placing an "E" pin in coat lapel of A. M. JORDAN, President of Local Union of the International Brotherhood of Paper Makers at the H & W Mill in Mobile, Ala.

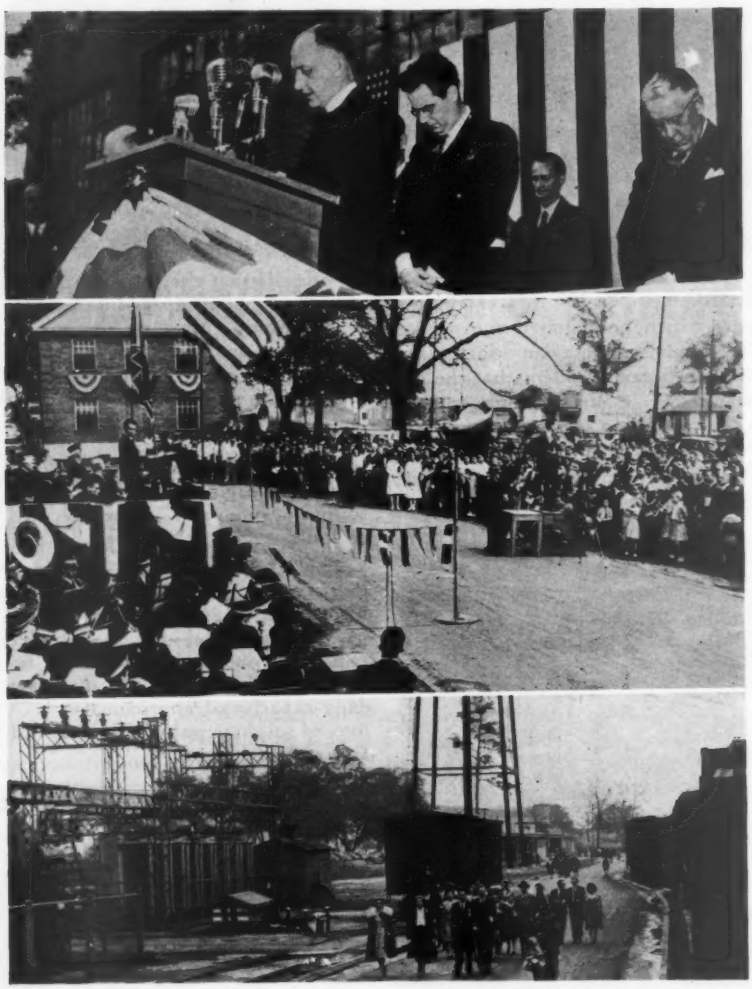
The employes of the mill, to whom full credit for the honor was given by the Management—and deservedly so—were represented by three of their union officials. The other two similarly receiving token pins from Lt. Commdr. Kline are shown below: J. U. McCRARY (left), President of Local Union of Pulp, Sulphite and Paper Mill Workers, and C. W. WRIGHT, Vice President of Local Union of Electrical Workers.

AN EXHIBIT of war products made from paper and board from the H & W Mill at Mobile, showing, among items, the kraft shell container, for which it won its "E." Also tags, food bags, etc.

machine, which has a maximum trimmed sheet width of 109 inches. This machine has an improved Pusey & Jones stream flow wet end. Incorporated in the machine are the comparatively new Pusey & Jones stream flow vats.

The Pusey & Jones Fourdrinier paper machine has a maximum trimmed sheet width of 168 inches. The Fourdrinier part is the "Rapidrape" type suitable for wire 184 inches wide, 95 feet long and developed for speedy wire changing. The only parts requiring removal are dandy roll, deckle and cut squirts. The back of the Fourdrinier is supported on frames, while a removable undercarriage, motor operated, supports the front side in alignment at all times. This machine has a maximum speed of 1400 feet per minute and is driven by a General Electric sectional motor.

THERE WERE SPEAKERS—INCLUDING (left to right): DENNIS E. COUSINS, Mill Mgr., who welcomed guests; COL. S. M. STROHECKER, representing Ammunition Plants; VICE PRESIDENT "JIM" MADDEN, who made acceptance speech, and JAMES H. COIL, Jr., Personnel Mgr., who was master of ceremonies.



SCENES AT MOBILE, ALA., "E" CEREMONY—first such award for kraft industry and, according to our records, first for any pulp and integrated mill (only few paper mills have "E" flags):

Above: Rev. W. D. O'Leary offers invocation.
Middle: Partial view of audience—"Jim" Madden speaking.
Below: Some of guests touring the mill.

The Mobile plant has six Dilts Machine Co. hydrafiners. There are three stages of pulp washing. The washers are Improved Paper Machinery Co. equipment. The pulp mill has an 82-inch trim pulp drying machine.

The bleach plant is a Thorne Impco system with a capacity of 100 tons. All stock tanks and bleaching equipment are protected with ceramic linings installed by Stebbins Engineering & Manuf. Co. The Mobile operation is generally recognized as making some of the best types of bleached kraft.

The recovery system employs two Tomlinson burners.

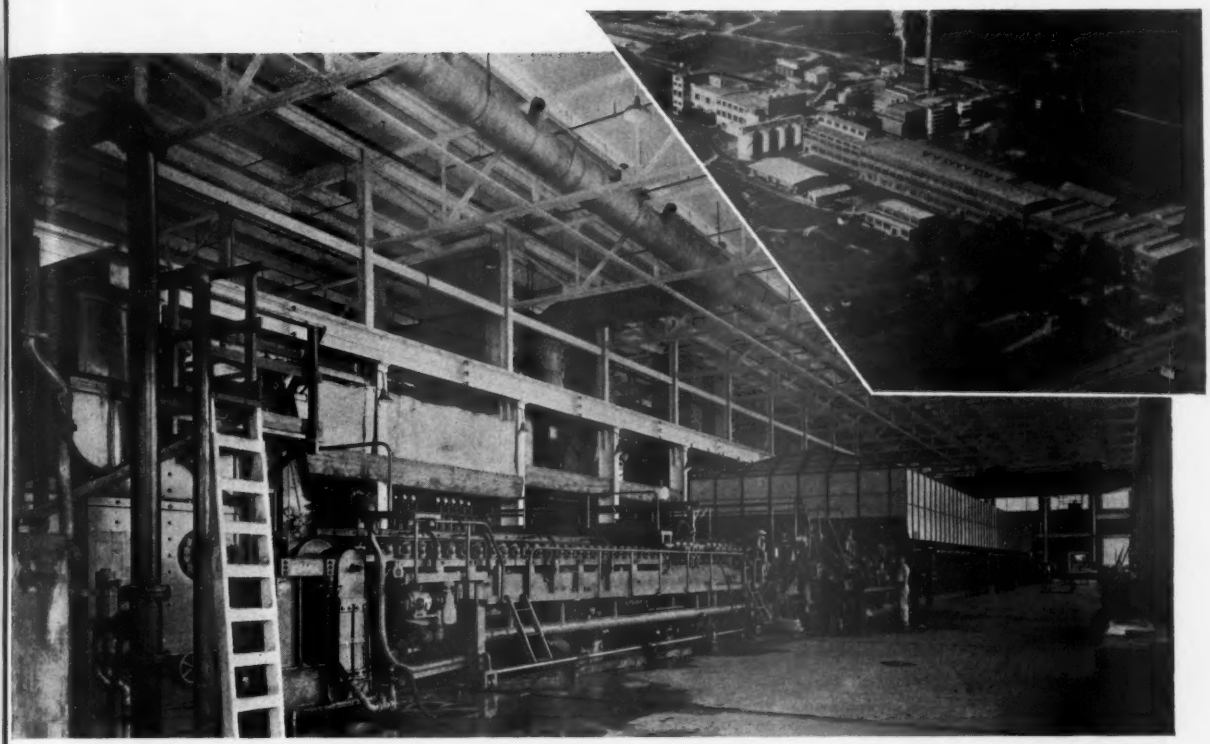
Shell Container Paper

• The Hollingsworth and Whitney Co. was called on soon after Pearl Harbor to produce many war purpose papers to exacting specifications. The manufacture of its civilian papers was drastically curtailed in order to take care of the war demands.

One of the problems presented to the organization by the Ordnance Department was that of designing a satisfactory paper container for shipping ammunition to the fronts without damage or loss.

The Ordnance Department asked for a strong, moisture-resistant cylindrical protector. This called for the strongest paper possible.

Chief Engineer Redden directed these experiments. Tests of various combinations and constructions were



VIEWS OF THE HOLLINGSWORTH & WHITNEY Pulp and Paper Mill at Magazine Point, Mobile, Ala. (inset) and of the Paper Mill's Fourdrinier Machine. This is an 184-inch Pusey & Jones machine making widest trimmed sheet of 168 inches. It has maximum speed of 1400 FPM. Drive is a General Electric sectional motor.

conducted in the company laboratories and in collaboration with the Ordnance engineers and the U. S. Forest Products Laboratory to develop the required paper and the design of the actual container. H & W engineers also assisted in the design of equipment for testing the ammunition containers.

It is of interest to note that this Mobile mill manufactured practically all of the high-test paperboard required for the ammunition container program until November, 1944, by which time others were able to meet the high quality specifications. The Chickasaw Mills have continually increased production and have never failed to make deliveries in conformity with the increasing schedule of Ordnance requirements.

On view at the Chickasaw Mills for the employees is a striking display of how the products of that mill helped to win the war. One is particularly impressed with the great number of uses that these papers serve in direct war work. Included in the exhibit are the following war purpose paper products:

Shell containers for 57mm, 75mm, 105mm and 155mm guns and howitzers, overseas wax dipped flour sacks, Army bread bags, paper tubes used on prime government contracts, electrical bushings, sleeves and insulating tubes, blasting cap cover tubes. Also it showed:

First aid items such as containers for swabs, bandage cores and ampoule protectors, food containers for Army use, oil stencil board used by Army Ordnance, Army Quartermaster Depots, Naval Supply and cargo ports of embarkation, gummed tape for packaging overseas shipments, file folders for Army and Navy, folding boxes for frozen fish.

Demolition bomb containers, emergency army medical tag books, time cards for war industries, Army message books, liquid tight paper cans for overseas shipments and waxed lining paper for TNT demolition powder.

Other products shown were tags for bazooka instructions, prisoners-of-war, aircraft inspectors, hospitals, gas mask instructions, gun assembly and bomb parachute assembly.

H & W History

• Hollingsworth & Whitney Co. is one of the oldest papermaking concerns in the United States.

As early as 1801 Mark Hollingsworth, father of one of the founders of the present company, operated a paper mill on the Neponset River below Mattapan, near Boston. His sons, Ellis A. and Lyman Hollingsworth, followed in their father's footsteps and each became expert in papermaking and contributed new methods to the industry.

Lyman Hollingsworth discovered an improved method for the manufacture of a strong paper by the utilization of waste rope in the manufacturing process. This improved process was mothered by necessity, for Mr. Hollingsworth, being faced with a shortage of stock after the panic of 1837, tried the experiment of cutting the bolt ropes off old sails lying in the mill yard and using this material in the manufacture of paper. The result was a manila paper of great strength and good quality. A patent for this discovery was granted to John M. and Lyman Hollingsworth in 1843.

The Hollingsworth & Whitney Co. was established at Boston on April 5, 1862, when Ellis A. Hollingsworth and Leonard Whitney,

What Does It Take to Win An Army-Navy "E"?

● "E" awards are quite common among the direct and more obvious producers of war equipment, including many companies which in peace time are principal suppliers for pulp and paper mills. To many of them, the "E" awards are an "old story" by now and they seem to have become quite blase about them.

But when a paper mill wins this high honor, it is quite a different matter—that's still a rare event.

Two years ago this magazine made an independent inquiry into the "E" award business. We received all kinds of explanations from the Army, Navy, WPB and congressmen. One highly placed Army official in Washington admitted that the Army Board had decided to grant several "E's" to forest products industries but these were later held up in other bureaus and never were granted. We were informed by the Navy Incentive Division that while the Army and Navy passed on manufacturers of "end products," they decided to leave the judging of makers of "basic materials" to the WPB.

The Recorder for the Army Board noted that "quantity and quality of production" were factors given greatest weight in selecting recipients. He noted these other points of judging in a printed leaflet on the subject:

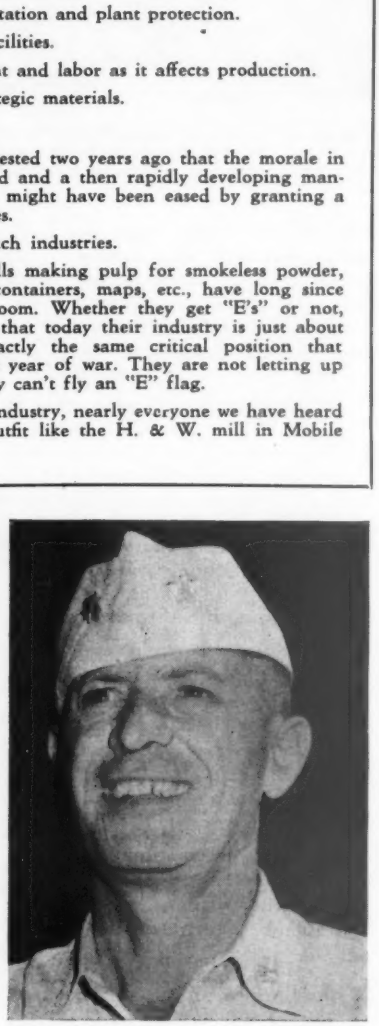
1. Overcoming of production obstacles.
2. Avoidance of stoppages.
3. Maintenance of fair labor standards.
4. Training of additional labor forces.
5. Effective management.
6. Record on accidents, health, sanitation and plant protection.
7. Utilization of subcontracting facilities.
8. Cooperation between management and labor as it affects production.
9. Conservation of critical and strategic materials.
10. Low absenteeism.

PULP & PAPER INDUSTRY suggested two years ago that the morale in woods and mills might have been lifted and a then rapidly developing manpower crisis in wood and pulp supply might have been eased by granting a few "E's" to forest products industries.

Mighty few have been granted to such industries.

But the men and women in the mills making pulp for smokeless powder, pulp for rayon tire cord, paper for containers, maps, etc., have long since thrown away the key to the crying room. Whether they get "E's" or not, they have the satisfaction of knowing that today their industry is just about the most vital in the war effort — in exactly the same critical position that shipbuilding and steel were in the first year of war. They are not letting up one iota in doing their job because they can't fly an "E" flag.

If "E's" have to be so scarce in this industry, nearly everyone we have heard voice an opinion is pleased that an outfit like the H. & W. mill in Mobile gets one—at least.



COMMDR. HAROLD D. CAVIN, USNR, may share reflected glory in the "E" award for the Hollingsworth & Whitney mill at Mobile. "Cavie" was Resident Engineer for Hardy S. Ferguson & Co. during construction of the H & W mill. The mill was built on range land and, according to him, they had to fence in the project to keep the cattle out of wet cement.

COMMDR. CAVIN, now on leave as Resident Engineer of Puget Sound Pulp & Timber Co., is now winning glory enough for himself as the Commanding Officer of one of the most famous Seabee Engineering Battalions, building airstrips, etc., on newly captured Pacific Islands, almost as quickly as the Marines capture them.

Jr., formed a partnership for the manufacture of paper and paper bags. Whitney had been operating a paper mill and bag factory at Watertown and Ellis Hollingsworth a paper mill at South Braintree, Mass.

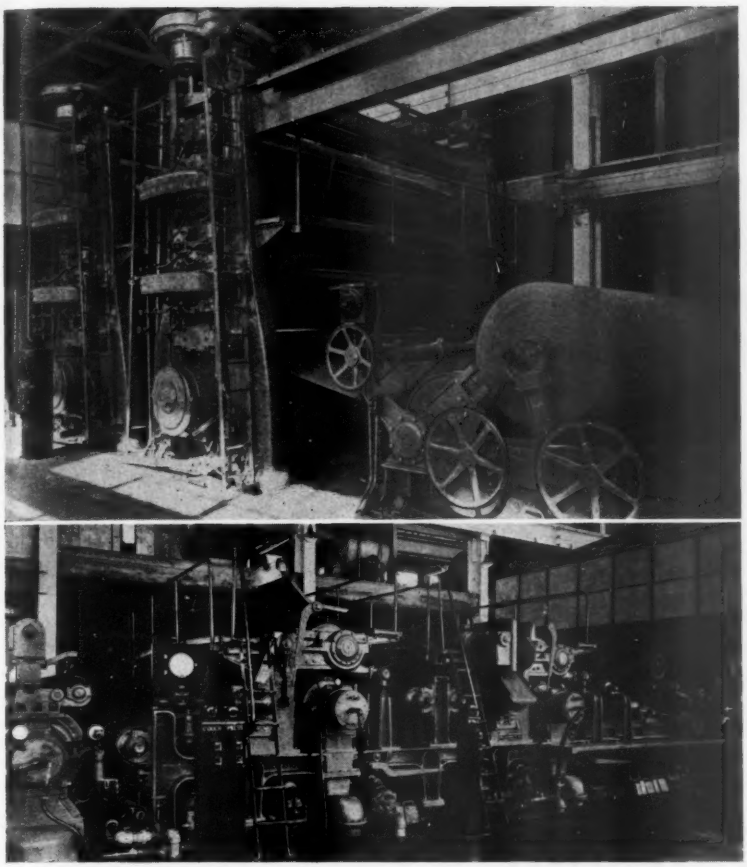
Leonard Whitney produced the first machine-made paper bags in America at Watertown in 1857, on a machine invented by one E. F. Rice of Clinton, Mass. The bags used in those days were made flat, much like an envelope and pasted together by hand. Hollingsworth & Whitney within the next decade had pioneered the first manufacture of the paper bags formed with a square bottom. This development of the forerunner of the modern "grocery bag" was effected through the purchase of the patent rights of an 1872 invention by Luther C. Crowell. An interesting story connected with this development illustrates some of the unusual incentives for invention. Mr. Crowell, when a lad, worked as cabin boy on a sailing ship and was scolded by his captain for not getting the sugar out of the corners of paper bags. Mr. Crowell found this censure was unwarranted because of the structure of the bag. In his spare time he pasted up a square bottom bag, and later invented the machinery to produce it.

H & W, and subsequently their successors, continued the manufacture of paper bags for the grocery and allied trade, along with the manufacture of various standard and specialty paper, until the year 1925, when the paper bag business was sold out to others.

Charles A. Dean became associated with the company in 1874 as sales manager. In 1876 a mill was purchased at Gardiner, Maine, which was to be the site of continuous operation from that date until 1939.

On April 1, 1882, following the death of both partners, the business was incorporated as Hollingsworth and Whitney Co., with Sumner Hollingsworth as the first president. In this year Charles A. Dean became vice president and general manager. Tonnage of paper produced increased from 2,705 tons in 1882-1883 to 54,000 tons in 1911, the year of Mr. Dean's retirement, while in the same period the capital stock was increased from $500,000 to $5,000,000.

Construction was started on the company's large mills at Winslow, Maine, in 1891. The capacity of this unit was increased under Mr. Dean's direction and that of his successors,



VIEWS OF PUSEY & JONES 184-inch kraft paper machine at Hollingsworth & Whitney mill in Mobile.

End view is shown above. There are two 8-roll stack calenders, Pope type reel, electric generator brake unwinder and "Puseyjones" winder suitable for 3,000 FPM speed.

Below is the press section. There are two suction presses and one plain or smoothing press.

W. E. Pratt and M. L. Madden, to a point where 300 tons of paper are produced per day on six paper machines, and the daily production of sulphite pulp is 190 tons. The bleach plant has a capicity of 50 tons per day. In 1908 a groundwood mill was built at Madison, Maine, with a capacity of 100 tons per day.

Machinery Order Tightened by WPB

● Paper mill machinery Order L-83, which restricts the delivery of new paper mill machinery, has been amended to include new parts as well as complete machines and equipment used in the manufacture of pulp, paper, paperboard, including containerboard, and converted paper products, the War Production Board has announced.

The order does not restrict delivery of machinery used in producing fiber shipping containers, folding cartons and set-up boxes, it was pointed out.

Favors U. S. Paper—Not Pulp—For Europe

● A resolution adopted by 41 present members and 111 proxies at the Association of Pulp Consumers, Inc., meeting in New York, Feb. 20, proposed that carefully screen and approved needs of liberated countries in Europe be relieved by shipments of paper and paperboard processed in the U. S., rather than with wood pulp.

Any appreciable tonnage of wood pulp shipped from U. S. would make it difficult to keep paper mills in this country operating, it was contended.

OPA Will Consider Raising Newsprint Price

● Eastern Canadian newsprint circles report that a further increase in price is possible in the early future.

Last price change for newsprint was in 1943, when two increases of $4 a ton each, or a total of $8, were approved by OPA. This revision upward was aimed to take care of increases in costs from the start of the war.

"Since the 1943 price decisions," states Financial Post, Toronto, "costs, particularly pulpwood costs, have continued upward, and both United States and Canadian mills have been pressing for further price adjustment.

"In the United States, the higher cost situation has contributed to a decline in production, and United States mills have been actively urging a higher price, the industry warning that unless this is approved a number of marginal mills will have to close down this year. The OPA has promised to review latest cost representations and has undertaken to give a decision as soon as 1944 fourth quarter results can be examined. At the same time, submissions by Canadian mills through the Ottawa authorities will be considered."

Apple Wraps for Australia

A call from Lend-Lease for 5,000 tons of apple wrap paper for Australia will require some adjustment between mills in the United States, affecting other papers. Canadian mills previously shipping 12,000 tons of such paper will be unable to supply the entire amount.

NEWS OF *The Pulp and Paper Industry--*

15 YEARS AGO

The U. S. Forest Products Laboratory at Madison, Wis., was seeking $900,000 in federal funds for erection of a new building.

Alexander Heron, former director of finance, State of California, joined the Crown Zellerbach Corp. in San Francisco.

Major Oliver M. Porter, manager of the National Kraft Paper Manufacturers Assn., was elected president of the Trade Association Executives in New York City, a branch of the national TAE.

Rumors spread that Weyerhaeuser Timber Co. would enter the pulp manufacturing industry. It employed an experienced pulp industry purchasing agent to make a survey.

Fred Shaneman, graduate of Dartmouth, became associated with Tacoma (Wash.) Electrochemical Co., March 15, to handle sales of chlorine and other products.

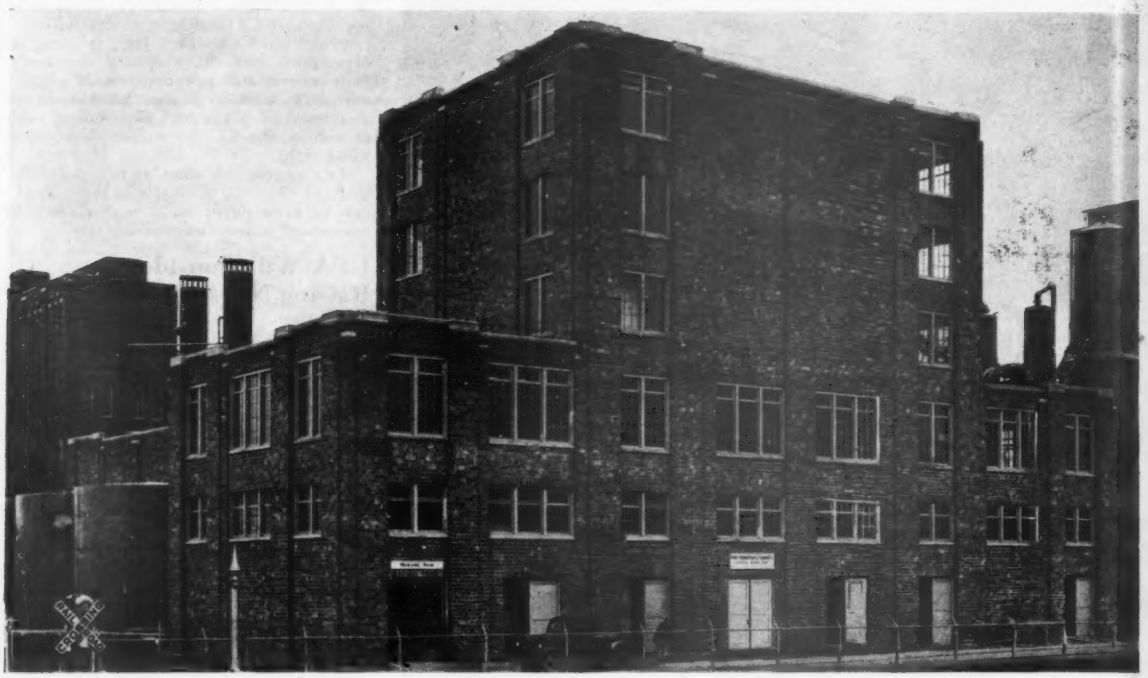
10 YEARS AGO

F. J. Sensenbrenner, president of Kimberly-Clark Corp., was elected president of the American Paper & Pulp Assn. Norman W. Wilson, vice president of Hammermill Paper Co., was elected first vice president. Charles W. Boyce was re-elected executive secretary.

K. O. Fosse and associates formed Coos Bay Pulp Corp. on March 4 with a capital stock of $500,000 to take over and operate the former Sitka Spruce Pulp & Paper Co., Empire, Ore.

Folke Becker, president of Rhinelander Paper Co., spent two weeks on the Pacific Coast in March of 1935.

Biggest Pulp Mill Alcohol Plant in World Starts Up



FIRST PICTURE OF THE RECENTLY COMPLETED MILLION-DOLLAR ALCOHOL PLANT built with U. S. Defense Plant Corp. funds in connection with the Puget Sound Pulp & Timber Co. operation at Bellingham, Wash.

Dr. McCarthy Stresses Significance Of New Puget Sound Alcohol Plant

● Dr. Joseph L. McCarthy, of the department of chemistry and chemical engineering, University of Washington, who has worked with Puget Sound Pulp & Timber Co. on alcohol production problems and who is in charge of part of the industry's $300,000 - $500,000 research program at the University, was asked to comment on the opening of the commercial alcohol plant at Puget Sound Pulp & Timber Co. He said:

"The officials of the Puget Sound Pulp and Timber Co. and other agencies are certainly to be congratulated for pushing through to completion the Bellingham plant for production of sulphite waste liquor ethanol so much needed for wartime purposes. This supply of alcohol will tend to set free for food uses some cereal grain now used for wartime alcohol production.

"Judging from results of the Washington State Planning Council research which has been carried out in the chemical engineering laboratories at the University, it appears that the processing methods used in the Puget Sound plant are the best now available. The plant should render a real service to the pulp and paper industry as a full scale test of what can be done in this field.

"In the postwar period there will now be available in the Pacific Northwest a basic industrial raw material which should find uses in many fields. Chemical derivations of alcohol such as acetaldehyde, acetic acid, ethylene oxide, chlorinated solvents might be produced locally as well as such plastics as cellulose acetate and ethyl cellulose. The high freight charges on alcohol shipments to eastern markets make it very desirable that large markets be found on the West Coast.

"Some 25,000,000 pounds of wood sugar per year, which has hitherto been lost, will now be converted into an important industrial product, and this is indeed a step forward. Developments in lignin utilization are proceeding rapidly, and the day may not be far in the future when it will be possible to make profitable chemical use of all the constituents in wood."

● An operation of possible far-reaching influence on the future of the entire North American pulp and paper industry got under way over the week-end of March 3-5 in Bellingham, Wash.

Commercial alcohol manufactured from sulphite pulp mill effluent began pouring into the huge storage tanks of the Puget Sound Pulp & Timber Co.'s new million dollar alcohol plant.

The biggest operation of its kind in the world, this plant has the eyes of at least the west coast pulp and paper industry focussed upon it. Many industry experts view the Bellingham operation as a huge by-product experiment which may, or may not survive the war. The operators hope it will. But many factors —the possible postwar market (now a big questionmark), the trends in competitive systems and even possible other by-products of sulphite liquor—will tell the story.

At least, most experts agreed that the Bellingham plant is superior in layout and methods to any previously built project of this kind. It employs somewhat different methods than the plant built at Ontario Paper Co. two years ago, the only other one of its kind on this continent.

The only previous pulp mill alcohol plants in North America were a pre-war operation at West Virginia Pulp & Paper Co., Mechanicsville, N. Y., and a small experimental plant of the old Crown Willamette Paper Co. at West Linn, Ore.

The first batch of alcohol passed through the Bellingham stills on the afternoon of March 3 and by late the next day—Sunday—alcohol of the proper industrial strength of 190-proof was attained and was flowing into storage tanks.

Ossian Anderson's Dream

● The late Ossian Anderson, one of the most colorful personalities in the industry

and the former president of Puget Sound Pulp & Timber Co., directed original planning of the project. After his death on Sept. 21, 1942, Fred G. Stevenot, president, and Lawson P. Turcotte, executive vice president, carried to completion the realization of his dream. Construction on the four-story plant began just about a year ago.

Entire output of the plant is being taken by the government for use either in the manufacture of explosives or synthetic rubber. Marketing agreements for methanol and fusel oil are pending.

About 600,000 gallons of pulp mill effluent are utilized daily in the alcohol plant. Complete cost figures are not available as yet, but company officials are confident that their product can compare economically in a favorable light with alcohol made from petroleum. There is no doubt that it will be produced at a greatly cheaper cost than alcohol now being made from grain.

The plant is being leased from the government for five years, with provision for extension of two additional years. The company has an option to buy at the end of five years, or 90 days after the end of the present war, for a minimum of 15 per cent of cost of construction, after the government has been repaid its investment in rental. Rental is paid on a gallonage basis — 13½ cents per gallon until the investment (nearly $1,000,000) plus 4% interest is paid, and thereafter, 7.4 cents per gallon.

Mr. Turcotte said that due to some work which was still in progress, the plant began operating at only about 40 per cent capacity but full operation was expected to be achieved by mid or late March.

The plant's daily capacity is about 5,500 gallons of ethanol (ethyl alcohol). In smaller quantities, methanol and fusel oil are obtained as by-products.

Erik Ekholm, general superintendent of both the pulp mill and the alcohol plant, said first tests of the ethanol had proved satisfactory and that the run on March 5 was exceeding proof requirements.

Eric Ericsson, technical director of the company, worked closely with Mr. Ekholm in studies of other systems and the development of technical phases of the project. Edgar Putnam was consulting engineer on design and construction. Commdr. H. D. Cavin, plant engineer on leave in the Seabees, was engaged in original planning for the plant and his work has been carried on by H. C. Haner, acting plant engineer.

Leonhard President of Paterson Parchment

● William C. Leonhard has been elected president of the Paterson Parchment Paper Co., Bristol, Pa. Richard T. Anderson was elected vice president and general manager; J. R. Dufford, formerly chief chemist, was elected assistant general manager; H. J. Kendall, formerly general auditor is now assistant treasurer and director.

W. J. Gray, general manager of the Paterson Pacific Parchment Co., San Francisco, has been elected a director of the parent company.

Bulkley, Dunton Moves

● The Chicago office of Bulkley, Dunton Pulp Co., formerly at 80 E. Jackson Blvd., has been moved to larger quarters at 120 South LaSalle St., Chicago 3. L. W. Lawrence is in charge.

New Pollution Bill Becomes Law in Washington

WITH the approval of Gov. Monrad C. Wallgren, the Washington state legislature on March 6 midnight finally passed a compromise pollution control bill, similar in many respects to the measures which have been in operation in the state of Oregon.

The 20 mills of Washington state did not oppose Senate Bill No. 294 —the "Governor's Bill." There was only one dissenting vote in the Senate and only three in the house.

This bill, with important amendments, substituted for Senate Bill No. 25 (text published in Feb. PULP & PAPER INDUSTRY, page 36), which the governor opposed. The sweeping powers which would be invested in a single individual, a commission chairman, under the original bill, were eliminated in the compromise. Under the former bill, the commission chairman, on his own, or the commission, could have invoked action against a mill, even before the courts acted on any appeals. The "Governor's Bill" provides that (except in an emergency affecting public health), any order or directive shall be stayed pending a court decision on an appeal.

Description of New Law

● There were several other modifications of the first and more drastic bill, which had won approval of the senate fisheries committee.

The "Pollution Control Commission" is composed of five existing state department directors — Conservation and Development, Fisheries, Game, Health and Agriculture—and shall elect its own chairman and "may recommend a director to be appointed by the governor." Only the director will get an additional salary, fixed by the governor and he may be removed at the pleasure of the governor.

The commission is to meet bi-monthly and may be called into special meetings by the director or three members. Three members constitute a quorum to transact business. The commission has the power to promulgate and enforce "rules, regulations and standards consistent with known, available and reasonable methods of preventing pollution, and consistent with the public welfare as it deems necessary. . . ."

The chief public health engineer of the Department of Health will serve as technical secretary of the commission. will "staff" and "direct" activities and make bi-monthly reports.

"Whenever, in the opinion of the commission, an emergency exists on account of any discharge, or threatened discharge which pollutes, tends to pollute or contributes to the pollution of waters of the state, it is empowered and shall seek injunctive or abatement relief in a court of competent jurisdiction. . . ."

It has the power to determine what is "a polluted condition" and the law states it shall be unlawful for any person or firm or other entity to discharge organic or inorganic material into any waters that tend to cause such a condition, "according to determination of the commission."

The commission or its agent may "enter at all reasonable times" any property to conduct an investigation and may require assistance of any educational institution or other state agency. It must receive and approve all plans for disposal plants, sewerage systems, etc.

Whenever the commission decides the law is being, or is about to be, violated, it must notify the person or firm by registered mail. Within 15 days of receipt of notice, that party "shall file with the commission a full report stating what steps have been and are being taken to control such waste or pollution."

The commission may then issue "such order or directive as it deems appropriate," and must notify the party by registered mail.

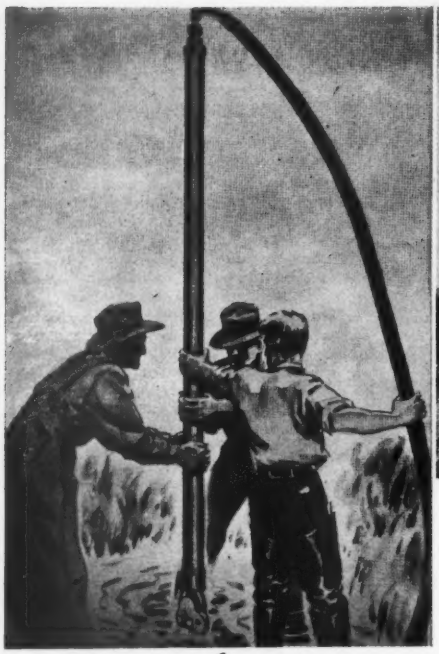
The two next sections of the law, amended before final action, require court approval before any appealed action, reduced a possible daily fine from $1,000 to $100 and otherwise modified original proposals. They follow in full:

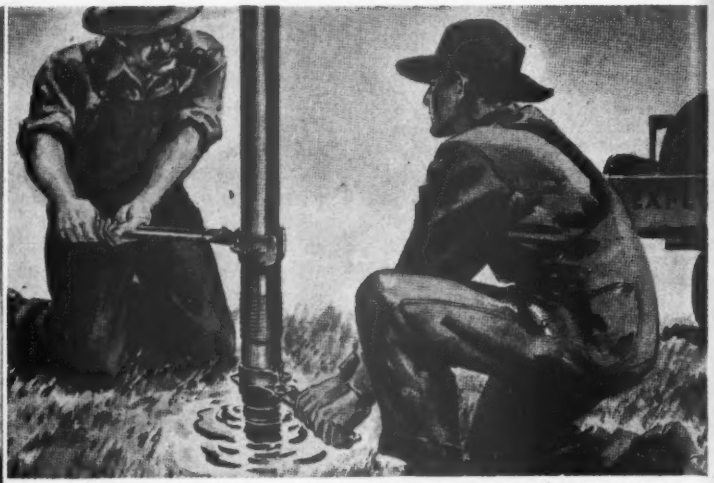
"Sec. 19. The commission shall grant a hearing to any person who shall feel aggrieved by any order or directive of the commission, upon application filed within 15 days from receipt thereof. At such hearing the petitioner may appear, present witnesses and submit evidence. Following such hearing the commission shall make its order or directive, and unless appeal is taken therefrom as hereinafter provided, the same shall be final and conclusive. Such order or directive shall be subject to review and trial de novo as a cause in equity upon petition filed within 15 days of the issuance of such order or directive, in the superior court of the county in which the affected system or plant, or some portion there, is situated. Except in case of an emergency affecting the public health, any order or directive shall be stayed pending the hearing before the commission and in case of appeal, pending final determination of the matter by the court. Any order or directive shall be subject to modification or revision by the commission upon the petition of any party adversely affected thereby.

"Sec. 20. Any person found guilty of willfully violating any of the provisions of this act, or any final written orders or directive of the commission or a court in pursuance thereof shall be deemed guilty of a gross misdemeanor, and upon conviction thereof shall be punished by a fine of not more than $100 and costs of prosecution, or by imprisonment in the county jail for not more than one year, or by both such fine and imprisonment in the discretion of the court. Each day upon which a willful violation of the provisions of this act occurs may be deemed a separate and additional violation."

Remaining sections of the law established a "Pollution Control Commission Fund" of $125,000 and set forth that this law was "ancillary to and supplementing" existing pollution laws.

Paper Base Tubings Proving Valuable Aid In Explorations for Oil Deposits





ILLUSTRATIONS SHOW HOW NEW PAPER BASE SHOT HOLE CASING made by Federal Electric Co., Inc., Chicago, makes for greater economy and increased efficiency in oil explorations.
Drawing at left shows special jetting bit being used with the casing. Easy and positive jetting results are thus assured, according to the manufacturer.
Drawing at right shows how the use of the product simplifies the casing of drilled holes. Note flat surface wrench is used.

● A new and valuable use for paper has been developed by the Federal Electric Co., 8706 South State St., Chicago, Ill.

The company is producing a impregnated and laminated paper tubing which is proving most valuable for use in seismograph explorations in search of oil. It is called a Federalite Plastic Shot Hole Casing and its use is demonstrated in drawings on this page.

The casing is made from a vinsol impregnated sheet, molded under heat and pressure on a press that was especially designed for the work.

Exhibits of these paper base tubings were on display in the Paper Division of the War Production Board in Washington when those offices recently were visited by a representative of PULP & PAPER INDUSTRY.

The paper base casing has an outside diameter of 3 1/32 inches with an inside diameter of 2 45/64 inches. It is furnished in 10-foot lengths. It withstands 200 pounds of hydrostatic pressure. Threads on the casing withstand 2500-4000 pounds pull or torque tests when used with either standard or heavy duty couplings.

Federalite Plastic Shot Hole Casing is packed for shipment in seven ten-foot lengths, 70 feet to a bundle weighing 61¼ pounds. This relatively light weight makes it possible to handle it with less manpower and with fewer and lighter trucks and equipment. The high tensile strength assures recovery of a high percentage of the casing above the shot.

The low rate of moisture absorption together with the light weight makes the casing exceptionally practical for marsh, swamp and water operations. The strength of the threads assures tight joints keeping the hole open for repeated shots and positive action in jetting operations with maximum recovery after the shot."

Future of Rayon, Including Tire Cord

The rayon industry is in strong hands, technically and financially, and in the postwar period, when more highly competitive conditions are foreseen, it promises to undergo moderate expansion, Edward B. Laufer of Laurence M. Marks & Co., says in a survey of "Progress in Rayon" reported in Chemical and Engineering News.

"The rayon industry should retain its old customers on merit and will cut into other products, but on a more keenly competitive basis than heretofore," Mr. Laufer points out. "An advantage for rayon here is that the natural fibers have recovered pricewise far more than rayon. Over a period of future years, the rayon volume may be expected to show moderate gains, with normal rest periods probably more freely interspersed than in the past."

Present projected capacity of the rayon industry is approximately 810,000,000 pounds yearly, of which 240,000,000 pounds represent tire yarn, a one-purpose fiber, and the rest—560,000,000 pounds—rayon for weaving and knitting, according to the survey. Postwar expansion in rayon capacity will depend, to some extent, on the success and permanency of rayon tire cord, it is stated.

Some feel that rayon tire yarn may only be economically produced in a one-purpose plant like that of Industrial Rayon Corporation, which has an acknowledged cost advantage in using wood pulp and in its continuous process. Some believe that tire yarn conversions have been hastily arranged under the war emergency, are high cost and connot be considered permanent.

Smalley, WPB Labor Advisor, Joins St. Regis Paper Co.

● R. K. Ferguson, president of St. Regis Paper Co., has announced that A. L. Smalley has joined the company as labor advisor to the president.

Prior to the war, Mr. Smalley was active in the ranks of organized labor and served on the national executive committee under D. W. Tracy, now assistant secretary of labor. Since 1941, Mr. Smalley served in Washington as labor advisor to Arthur Whiteside, Frank Keenan and W. Y. Elliot, vice chairman of the War Production Board.

New Forestry College Dean

● Gordon D. Marckworth, former dean of the forestry school, University of Georgia, and prior to that, head of the forestry department, Louisiana State University, has become dean of the college of forestry, University of Washington.

Hugo Winkenwerder, nationally known for his forest conservation work, was forced to resign that post after 33 years because of ill health but will continue as dean emeritus and part-time professor.

Puget Sound Team Played In Fast League

● The basketball team of Puget Sound Pulp and Timber Co. completed a fairly successful season in the Bellingham City League. One of the league, the Coast Guard, defeated the famed Harlem Globe Trotters. The mill team consisted of Capt. Gerald Green, chemist; Manager Fred Hunt, carpenter; Darrel Mock, cook's helper; Milton Read, millwright's helper; Charles McCullough, storekeeper; Walter Kaufman, millwright, and Elton Carr, mechanic.

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PAPER "WIPE" REPLACES CLOTH

(NEWS ITEM: *Over 20,000,000 lbs. of paper lens tissue was used by the Navy in 1944 as a substitute for wiping rags.*)

The Armed Services are using wiping cloths made of paper instead of critical cotton for cleaning lenses, machinery, etc. Cheaper than cloth, this new paper product is free from lint, grit and acidity. It's as serviceable wet as dry.

Greaseproof paper as a substitute for parchment . . . Laminated Kraft paper bags to replace burlap . . . Paperboard containers to conserve metal . . . Impregnated paper to take the place of cloth . . . New uses for paper, calling for new standards of lightness and toughness, new standards of quality in performance. New responsibilities—new opportunities for the Pulp and Paper Industry.

Puseyjones men and production facilities are at war—and Industry at War is Industry thinking and working at hitherto unheard of speeds. Our Research and Development Committee, working on the problems of America at War, is finding many practical and technical advantages that will be of incalculable value to America at peace—to the Paper-Making Machinery of the future.

We are in a position to repair or modernize existing machines where essential to the war effort and as approved by the War Production Board . . . If you have not received your copy of our bulletin, "New Features in Paper Making Machinery", write for it today.

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THE SIGN OF SUPERIOR QUALITY

All-Around Cooperative Effort Keeps New England Mills Operating at 90%

IF you are running a logging camp in northern Maine and you get hold of a green team for pulpwood hauling you naturally want to put the best man you've got on that team. He'll break them in faster and he'll break them in right.

But the best man you've got is also very probably the best producer of wood in the crew. And if you give him a green team you are likely to drive him out of the woods.

That's just one of the minor problems that beset northern New England woodlands superintendents in this ring-tailed snapper end of a real old-fashioned winter. Multiply that lone problem by a hundred—and add a few more. Things like having to stop the chain conveyor periodically to chisel out the frozen snow from the chain sprockets. Things like digging the wood out from under the drifts after it has been felled and bucked. It takes a lot of cajoling of nature, a lot of rugged patience, a lot of dry humor, and a lot of Johnson's liniment to get the pulpwood out of northern Maine—and these Maine men are just the ones who can do it.

Considering the adverse conditions, and the factors which make impractical much of the mechanization found in other areas, it is a great tribute to the state of Maine that they are not alone in their difficulties at this bitter winter's end. Of the approximate 50 wood-consuming mills in New England, 15 are in Maine. And despite a 40 per cent shortage in crews, no Maine mill has shut down for lack of wood—yet.

To a visitor from another logging region the cutting and hauling of Maine pulpwood may seem deceptively simple. The trees are felled, limbed and bucked. The wood is hauled to the loading area by horse-drawn sleds. Then loaded into 10-wheel trucks by means of a crew of five or six men and a gas-driven chain-belt conveyor which is portable. The truck roads are definitely winter jobs. A quick thaw can gum up things immeasurably so far as the trucks are concerned. Yet a thaw is desirable on the streams, and the settling of the snow would make finding the wood much easier. In a winter like this one, and with the war breathing hot for paper and pulp, your Maine logger is between the devil and the deep blue sea. Sixty cords, a hundred, such figures loom importantly in a northern Maine camp these days.

Danger of Forced Shutdowns

● At this writing nobody knows whether a part of the Maine mills will have to shut down. All anyone will venture is that some of them will—unless everybody connected with the industry stays on the job. When a representative of PULP & PAPER INDUSTRY visited northern Maine early this month there was plenty of evidence that Maine was going to stay on the job.

Woodsmen are deferred but not exempt from military service, and the war manpower needs have taken a big toll. Bangor, for instance, is a city of 6,000—and not less than 1,200 of those are in the armed services today. Canadian labor is not as easy to obtain as of old, although as this issue goes to press the Dominion was taking steps to allow additional bonded woodsmen over the line to haul U. S. pulpwood to the mills.

The farmers have done yeoman duty in cutting pulpwood and the industry is grateful. They can furnish hardwoods in fairly satisfactory supplies, but they cannot contribute to the supply of spruce, fir and hemlock in the less accessible areas. And Maine draft boards, with only farmers and woodsmen to draw upon for quotas, are sometimes forced against better judgment to deplete the ranks of civilian labor.

The deep snows have tied up cars, and necessitated more man-hours for shoveling. At one time this winter there were 14,000 cars frozen in at Buffalo, a mishap still felt, and it is due to lack of cars that no wood has been moving in from Canada. And mill inventories are low. The wood piles at the mills spiral thinly against the conveyor towers, only a shadow of what they would normally be to carry through the mud season and the spring break-ups.

Yet there is encouragement in the fact that receipts of pulpwood at New England mills last year were three per cent greater than in 1943—in excess of the WPB estimates. And the mills, by a herculean cooperative effort on the part of themselves, pulpwood producers and farmers, are maintaining a 90 per cent capacity at this writing.

But Maine, sweating in the woods at sub-zero temperatures, is mindful of the low inventories wherein a momentary interruption of supply would be serious. It is mindful of the writing off of imports. And most of all it is mindful that 15 per cent of the wood coming to Maine mills is not being made into paper, but is sent to converting mills devoted to nitrating pulp for explosives.

Many a Maine man would like to see some cut-backs in war plants, to get more labor into the woods. The big war factories, paying more money for easier work, have siphoned off a lot of woodsmen.

War prisoners? It's a controversial subject in northern Maine. The Germans will average about three-

Pulpwood Conference in New York

● Representatives of many New York and Pennsylvania pulp and paper mills reported a successful Pulpwood Production Conference was held at Warrensburg, N. Y., Feb. 5-9.

In the face of diminishing manpower on the home front, the conference sought to assist in increase of pulpwood production so vital to the war effort.

It was under guidance of D. M. Rochester, American Paper and Pulp Assn., and Kenneth Trowbridge, American Pulpwood Assn., whose organizations sponsored the conference. A similar conference was held last Fall at Princeton, Maine (November, 1944, PULP & PAPER INDUSTRY) and another is scheduled for Michigan this spring.

Emphasis at Warrensburg, and at the Pack Forest (under N. Y. State College of Forestry) where a mechanized demonstration was held, was distinctly toward the woods end of pulp production. The focus was held to modren mechanized equipment, including a full demonstration of power saw performance. The

A. B. RECKNAGEL, Area Forester for New York State, Timber Production Project of U. S. Forest Service.

Timber Production War Project of the U. S. Forest Service, of which A. B. Recknagel is area forester for New York state (N. Y. Conservation Dept., Broadway Arcade Bldg., Albany, N. Y.), actively assisted in the project. Aiding him were Harry Jefferson, Eph Olliver, and Earl Noble, forest service specialists.

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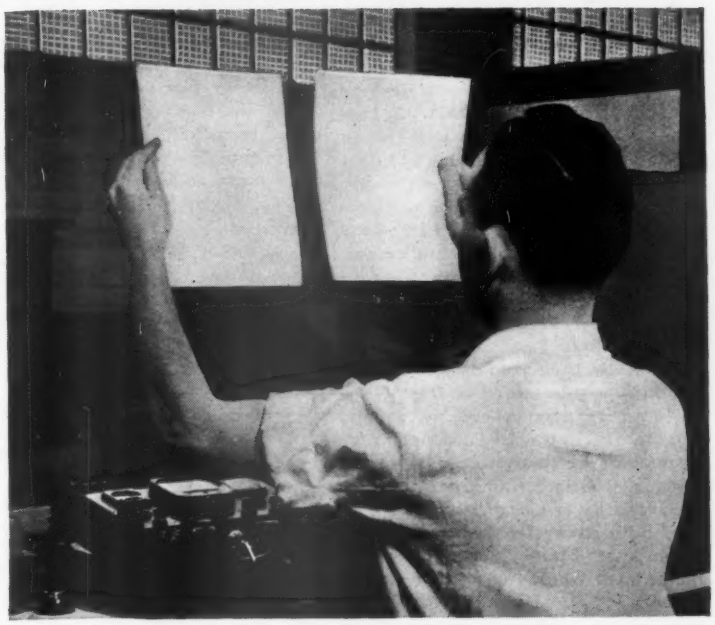

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quarters of a cord per day, far less than a Maine man or a Canadian will cut. You hear stories about heated trucks for transporting the prisoners. You hear that a brief flurry of snow requires taking the prisoners back to camp. No Army man will affirm nor deny reports about war prisoners. But the facts are that some 2,000 are working in New England and that in the six months ending Dec. 30 they cut 60,000 cords that were sorely needed and which would probably not otherwise have been available.

New Methods

● We mentioned above that much of the mechanization practical in other logging areas of the U. S. cannot be employed in Maine or in other New England states. This is not to say that Maine operators are not keenly open to any new method. Like the West Coast and the South, they have been in the cutting season just past experimenting valiantly with gasoline-powered chain saws. The cost per cord is still high and the maintenance not yet quite satisfactory, but they are not abandoning the saws without further trial.

A further example of how New England is continually attempting to adapt modern methods, or combinations, is seen in certain operations of the Dead River Co. of Bangor which logs both in western Maine and in down east Maine. Dead River is hauling the whole log to the railroad siding, cutting it into pulpwood at the siding with a 60-inch circular carriage saw, and loading it into the cars by means of a conveyor.

All camp cooks are philosophers, and one at a camp of the Great Northern Paper Co. opined that there were no longer men in the Maine woods such as there used to be. Whereupon he fed the crew clam chowder, the Maine kind which is the only kind; beans, sausage, fish, potatoes, pie, cookies, fried eggs and beacon, with plenty of bread and butter and coffee.

And somebody is getting the pulpwood out in Maine, under terrific handicaps this year. It may be the men in the woods, it may be the superintendents, it may be the area inspectors, or the men in the offices at Bangor and Boston. Possibly it is the mills, or WPB, or the farmers.

But most likely it's all of them. Your quiet New Englander, buckling on his overshoes long before the sun makes a mirror out of the snow, wouldn't be surprised if it was.

Pete Onkels Solves Red Point Problem

● Pete Onkels, superintendent, Pacific Coast Paper Mills, Bellingham, Wash., is helping fellow employes solve the red point problem by his prowess in catching the elusive steelhead.

His version of what smoked salmon should be furnishes the main course of the Noon Day Luncheon and Pinochle Club at the tissue mill. Pete uses an old Indian recipe.

Dredging to Begin For New B. C. Kraft Mill

● Dredging and filling of ground for the new Bloedel, Stewart & Welch sulphate pulp mill at Port Alberni, British Columbia, will proceed this spring. However, final plans and selection of most equipment is still undecided, contrary to recent press reports.

Prentice Bloedel, president of the company, has returned from another eastern trip in which he continued his investigation of processes.

Slab and waste wood from two sawmills will comprise almost all of the raw material for this pulp mill.

Hydraulic barking for 40-foot logs for the adjacent sawmill will be installed, in line with the new trend for wood savings in the west by this means. However, the type of hydraulic barker to be used is still under consideration. An important factor is that it will be necessary for the company to make its own power installation for this type of barking.

Although at the outset, the kraft pulp will be unbleached, provision will be made for possible addition of bleaching equipment at a later date.

Frank Holbrook Dies

● Frank E. Holbrook, former mill manager of Oxford Miami Paper Co., West Carrollton, O., died in Dayton, O., Feb. 27. He was 68. He formerly held executive positions with Combined Locks, International, Great Northern and Kimberly-Clark paper companies.

Edwin Brown Dies

● Edwin R. Brown, manager of the Oregon Safety Council and a number of years ago engaged in safety work with Crown Zellerbach Corp., died in Portland, Ore., Jan. 28.

STEPHEN N. WYCKOFF (left), since 1938 Director of the Pacific Northwest Forest and Range Experiment Station in Portland, Ore., of the U. S. Forest Service, who will transfer to Berkeley, Calif., where he will have charge of the California Station.

DR. ALFRED J. HALL (middle), Principal Biochemist of the Forest Service, and former head of the Central States Station in Columbus, O., will succeed Mr. Wyckoff in Portland. The change will be made some time in March. Dr. Hall had an important part in starting the Defense Plant Corp.'s alcohol-from-sawdust plant in Springfield, Ore.

DR. EDWARD G. LOCKE (right), former Oregon State College faculty member, who has been appointed Chemical Engineer on the Portland Station's staff and whose special assignment will be liaison between Pacific Coast forest industries and the Madison, Wis., Forest Products Laboratory.

Chip Car Unloading and Wood Room Alterations At Longview Fibre Co.

NEW METHOD OF UNLOADING CHIPS FOR LONGVIEW FIBRE CO.

Upper left—Chips are pulled carefully from the car lest too many be spilled into the spillway.
Lower left—The rake for chip cars at Longview Fibre Co., Longview, Wash., sweeps across the bottom of the car in this fashion, dropping chips from one edge or the other into the conveyor below.

Upper right—The splitter in action, showing the steam cylinder (lower left) with the splitter head in action against a wood block, and showing position of the operator to secure clear vision.

Lower right—The pusher which shoves the wood blocks from one conveyor to another set at right angles, is illustrated here. Note the operator's seat. This picture is taken from the rear also.

● Alterations in the method of unloading chips which are hauled from Long-Bell Lumber Co., Longview, Wash., by trains of chip cars belonging to the Longview Fibre Co., for its own use has been progressing for three months.

After establishing the method, the time factor depended upon the rapidity with which the cars could be renovated for the new job. Renovation consists in boarding up the blind ends in each of three sections of a car.

Originally the cars were emptied manually with poles and rakes. Under the new system a heavy angle iron of sufficient length to clear the bottom has been installed, with chain attached at each end on either side leading to a single pull ring on either side. A stationary motor with chevs for reverse action is attached by cable to the rings from either side. In this manner the rake moves back and forth in the bottom of the car, sliding the chips to one side or the other so they may drop to the chip conveyor installed below the rails.

The cars are thus cleaned without labor, except for an operator and a couple of men to steer the chips and keep them feeding to the conveyor. The cars are so constructed that each section has two full doors, one on either side, which open full width. As the cars are built of Wolmanized lumber, it also has been employed for the additions. To date, 45 cars are now in use.

For the purpose of increasing woodroom "through put," Longview Fibre has added another splitter which, while similar in the splitting device to others, differs in that a pusher has had to be added to move the block from the chute which accommodates the first splitter to another conveyor traveling at right angles. This log pusher is Filer & Stowell equipment, the same as a shotgun feed on a sawmill carriage. Built with quick activating valves, the pusher instantly clears the chute by delivering the wood block before the new splitter.

Neither splitter nor pusher was made at the mill but was farmed out to various machine building companies, including Sumner Iron Works.

McNair With Weyerhaeuser After B-29 Experiences

● Capt. William M. McNair, U. S. Army Air Forces, has been honorably discharged after service abroad with the U. S. Army Air Forces and has returned to his former post as a district sales representative for the Pulp Division, Weyerhaeuser Timber Co., in Chicago.

Captain McNair served as intelligence officer for a B-29 outfit in China and India.

Also continuing as a sales representative in the office in 400 West Madison Ave., Chicago, is William Geiger.

Remains in South Africa

W. Oury Hisey, of the New York State College of Forestry, who went to South Africa in May, 1944, on a temporary engagement as consultant for the Union Corp., Ltd., of Johannesburg, and the Industrial Development Corp. of the Union of South Africa, has resigned as associate professor of pulp and paper manufacture at Syracuse University, to remain in South Africa with those industries.

Weyerhaeuser's Famed Barker Gets "Little Brother"-- Cleans Wood Slabs By Hydraulic Method

● Hydraulic wood slab barking — a significant development on the Pacific Coast, progressing concurrently with the much more widely advertised development of whole log hydraulic barking — is encouraging and justifying a number of mills in making greater use of small wood.

This trend toward small wood useage is being given a great deal of thought and study on the Pacific Coast as wood supply becomes an increasingly engrossing problem. The necessity for more complete wood utilization, including the use of wood formerly disdained as worthless or good only for fuel, is being widely recognized today in the west, just as it was in past decades in the older forest industry regions of Europe and eastern North America.

Just as it pioneered in the development of the whole log hydraulic barker, the Weyerhaeuser Timber Co. has been a pioneer in developing the barking of slabs by water. It now is generally well known throughout the industry that a barker which cleans logs up to 72 inches in diameter and 26 feet in length has been in operation at the Everett, Wash., mill of the Weyerhaeuser Pulp Division since Aug. 7, 1942. This method of barking, combined with a whole log chipper installed five months later, has increased sulphite pulp production per thousand feet of logs at the Everett mill by approximately 20 per cent.

Now a "little brother" to the big barker — a much smaller machine which has almost overnight made it highly economical to use four-foot wood slabs from sawmills — is operating in a small wood frame shed alongside the big barker plant.

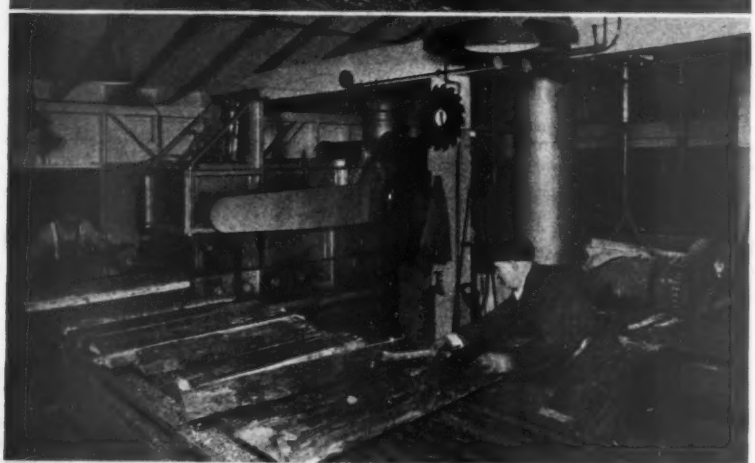
This machine is likewise effecting about a 20 per cent saving in wood.

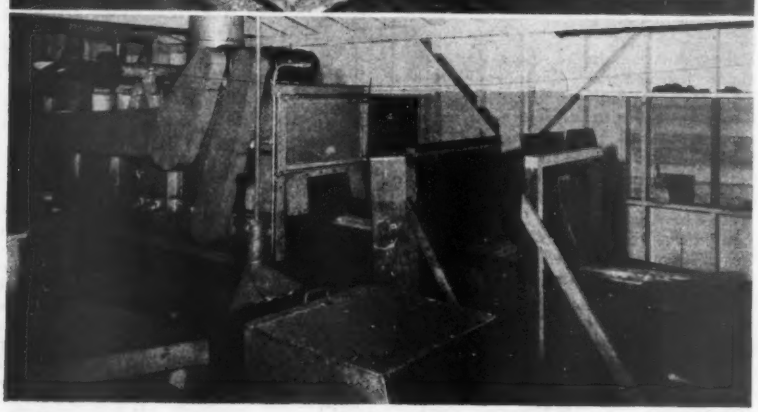
For nearly two years the Everett mill has been using slabs from the Weyerhaeuser Timber Co.'s sawmills at Snoqualmie, White River and Willapa, Wash., to supplement their wood requirements because of the wartime log shortage. But until the night of Sept. 19, 1914, when the hydraulic slab barker went into operation with a regular crew, the slabs had been cleaned by Gruber barkers. This mechanical barking method on such small wood took off much good wood as well as bark.

Part of the wood saving also is in the elimination of much saw kerf. With the mechanical barkers, one 51-inch chipper was used and slabs had to be bolted down to five inch width. Every bolting operation, of course, wasted wood. Now two 72-inch Sumner Iron Works chippers are used in conjunction with the increased output of the hydraulic barker and slabs up to 16 inches in width are used. Only about 25 per cent of the slabs coming to the mill have to be bolted.

The hydraulic method of cleaning is not only making an important saving in wood. It is a much speedier and more efficient method.

The machine has a capacity of in excess of six cords per hour. This means about two railroad car loads of the slabs can be cleaned in an eight-hour shift. All the slabs from the Weyerhaeuser mills are four feet long and a cord of this type of wood varies from 100 to 150 pieces. As each piece is put through the barking machine by hand, more cords can be produced in a given period in larger sizes than in smaller slabs.





Description of Equipment

● According to plans developed by the mill staff, the Sumner Iron Works of Everett constructed the barking machine and also the bark refuse conveyor. Much of the equipment used was machinery from the old wood room, reconditioned

VIEWS OF THE WEYERHAEUSER HYDRAULIC SLAB BARKER:
Upper: Shows slabs being sorted, the oversize slabs going back through the bolter.

Middle: Slab barker sorting conveyor and slabs being fed into the barker, in the background.

Lower: Full length view of the slab barker with the exit conveyor at the near, or right end.

in the mill's machine shop. As in the case of the big barker, wartime priorities made the task of the Weyerhaeuser staff a difficult one.

The barker machine is 14 feet long. The slabs run through the length of it over bottom feed roll designed to handle the edgings with the bark side up. Fluted top feed rolls hold the slabs in place. Three nozzles are midway in the train of rolls, in a perpendicular position, crosswise above the slabs. The water jets overlap and cover a width of 18 inches (an inch wider on each side than the slabs). The machine is housed in steel.

Slabs go in end to end and are cleaned across the upper or bark-covered side by water pressure of 1400 lbs. per square inch. The nozzle tips are about 24 inches above an average size slab. As one slab follows another through, the water pressure is continuous. The machine uses 900 gallons of water per minute.

Those familiar with the big barker at Everett, may recognize that the same high pressure is used on the slabs as the big logs. The same Byron Jackson high pressure pump, driven by a Westinghouse 1,000 hp. squirrel cage induction motor, which serves the whole log barker, also serves the small slab barker.

Thus far, the big barker has been operated on day shift and the slab barker on the night shift.

If one run through the machine does not clean a slab sufficiently — a rare occurrence — then the slab can be rerouted through the machine.

Railroad cars bring the slabs right up to the slab barker shed where they are unloaded onto transfer chains. The transfer chains bring the slabs to a barker feed table. En route to this table, there is a separate transfer for slabs that are more than 16 inches wide. These are routed to a Sumner lathe bolter where they are split to the width necessary for the barking machine. From the exit of the machine, the slabs are conveyed to chippers in the wood preparation plant.

On a floor below the barking machine are a Jeffrey Hammer hog, driven by a Westinghouse 50 hp. motor and a 1,000-gallon per minute trash pump fitted with a trash type impellor. The bark drops down to this hog. The pump takes away water and hogged waste.

The quality of the pulp has not been altered in any way by use of hydraulic log or slab barking, according to Mill Manager Russell J. LeRoux.

Puget Sound Pulp & Timber Co., Bellingham, Wash., which began using slabs as part of its wood supply well over a year ago, also switched from mechanical to hydraulic barking of these slabs during the past year. This machine, like the Everett one, uses feed rolls with three crosswise nozzles above the slabs.

The Everett and Bellingham mills cooperated freely, sharing ideas and information, in the concurrent development of their slab barkers which differ only in minor respects. (The Bellingham barker was described in the October, 1944, issue of Pacific PULP & PAPER INDUSTRY). Now a third slab barker, with feed chains and a pendulum nozzle, is being put into operation at the Port Townsend, Wash., kraft mill of Crown Zellerbach Corp.

It is reasonable to expect that more of them will be made and that their introduction will result in much greater use of small wood in the Pacific Coast mills.

Powell River Official's Report on Use of Sawmill Waste

● The use of hydraulic barkers and the increasing scarcity of available large wood had turned many western pulp and paper mills to use of increasing amounts of sawmill slabs and waste. More and more of this is being shipped across the line from Canada to U. S. mills in the Pacific Northwest.

Vice President Robin Bell-Irving of Powell River Co., made the following interesting analysis of sawmill waste utilization in a report to the Sloan Commission, which is making a potentially important study of British Columbia forest practice and resources:

(a) To date there seem to be a wide variation in opinion as to the percentage of sawmill waste which might be economically utilized for pulp and paper purposes.

Obviously this figure will differ greatly between one sawmill and another, depending on nature of lumber being cut, type of equipment, species and grade of logs, also adequacy of waste recovery facilities.

However, whatever the correct average percentage figure may be, there is no doubt that, given the necessary attention, in the aggregate a very large volume of suitable material could be economically recovered.

(b) For example, information obtained from several sources where careful test measurements were made, indicated to us that for a mill cutting lumber from camp run average 18-inch diameter hemlock logs, the volume of good chips recoverable from lumber offal, expressed in terms of cubic feet of solid wood, with overrun in lumber production not exceeding 10%, and with careful attention to recovery, would probably be approximately as follows:

1. Mill equipped with circular headrig and usual woodroom recovery plant. Approximate recovery of chips, expressed in terms of solid cubic feet of prepared chips equals 23 cubic feet per 1,000 F.L.S.

2. Mill equipped as for 1, but provided with hydraulic log barker, which barks all logs before milling take place—Approximate recovery of chips, expressed in terms of solid cubic feet of prepared chips equals 31 cubic feet per 1,000 F.L.S.

(c) It is emphasized that the figures of 23 cubic feet and 31 cubic feet, respectively, mentioned in Paragraph (b) above, are solid cubic feet measured after the wood preparation loss has already taken place.

On this basis, had the same waste wood recovery been utilized for the production of newsprint, then the net mill sales receipts on such newsprint, based on our actual 1944 third quarter average newsprint sales, would have been—

For case (b) 1—$15.00 per 1,000 F.L.S. of sawmill cut;

For case (b) 2—$20.00 per 1,000 F.L.S. of sawmill cut.

(d) Regarding the appropriate salvage facilities which might be provided at the sawmills, it is not suggested that every sawmill would be warranted in installing a hydraulic log barker as decision would depend on the cirmustances in each case, particularly in regard to location, cost of power, size of mill in relation to log barker installation cost and average precentage of sawmill cut which would be made from logs of species suitable for pulping purposes.

Incidentally, in this connection we are informed that, quite apart from improvement in waste recovery, actual tests show that pre-barking of logs prior to sawmilling enables the mill to improve both the average grade and quantity of lumber recoverable per 1,000 F.L.S., indications being that this increase in revenue might be in the order of about $1.00 per 1,000 F.L.S. cut.

Moreover, it is not suggested that chipping equipment should necessarily be located at all sawmills, firstly, because some of the wood can be used in the grinders, and secondly, because it will require a careful study in each case respectively to determine whether combined overall costs would be cheaper if the chipping were done at the paper mill.

Irrespective of decision re hydraulic log barker, however, we do feel that in order to secure overall efficiency in waste recovery for pulping purposes, it is most important that effective means for segregating by species be provided at the sawmills.

(e) Subject to the war and post-war essential lumber requirements, we suggest that possible reduction in percentage of low-grade side lumber and similar qualities and diversion of this material for pulp recovery may warrant careful consideration by sawmill operators.

(a) In view of the various pulp and paper processing problems already mentioned in connection with use of logging waste, it is not now possible to make any very concise statement as to the relative volumes of logging waste and sawmill waste which might be economically utilized.

It should be noted, however, that with proper care in waste recovery methods, insofar as the pulping processes are concerned the difficulties in using substantial quantities of sawmill salvage would be materially less than would be the case with salvage from logging waste.

125-Ton Kraft Mill

● Powell River Co. plans for a 125-ton-a-day kraft pulp mill were announced recently by Vice President Robin Bell-Irving.

Mr. Bell-Irving said that, depending on relative prices and on the particular kraft grades which the company may ultimately decide to produce, it was probable that on the average an equivalent of about 50,000 feet log scale could be utilized in this operation.

"Assuming this usage and 20 percent logging waste in groundwood would place the overall percentage use of logging waste at approximately 17 to 18 percent of our integrated total wood requirements, including wood for kraft," added Mr. Bell-Irving.

Although Powell River Co. has carried out extensive experiments with the use of logging waste, Mr. Bell-Irving seems more optimistic regarding the utilization of sawmill waste. He points out that for the 10-year period ending December 31, 1943, only 38 percent of

the hemlock scaled in British Columbia was consumed by the pulp and paper industry, with 56.1 percent going to the sawmills. The trend in recent years has been toward a greater use of hemlock for milling purposes.

More Small Wood For Western Mills

● Several pulp and paper manufacturers in Washington state have been receiving raw material in recent weeks from the emergency cordwood stockpile accumulated during the past two years by the city of Vancouver, B. C.

Following a critical wood shortage in the winter of 1943, the Canadian regional wood fuel control organization and the city purchased large quantities of hemlock, spruce and balsam and held it in reserve on city property near False Creek. No fuel shortage developed in the 1944 winter or during the past few months, so it was considered advisable to dispose of the wood.

About 20,000 cords of wood are in the city's reserve and the Regional Wood Fuel Control has additional stocks from which shipments will be made to American mills. Puget Sound Pulp & Timber Co. has taken delivery of some of the wood. Others interested include three other companies operating pulp mills on Puget Sound and the Strait of Juan de Fuca.

Veteran Canadian Engineer Outlines His Views On Future Trends in the Industry

● John Stadler, veteran engineer and designer of many North American and European pulp and paper mills, speaks from 40 years experience in the industry in a statement of his views on what the postwar era will be like.

Mr. Stadler, who was visited at his Montreal office by a representative of PULP & PAPER INDUSTRY, set forth these principal thoughts on the subject:

1. More extensive cooperation with government will be required.
2. The industry has entered a period of refinement, and will take more technical men into management.
3. Conservation of resources will be imperative.
4. Uniform regulations for all provinces of Canada will be necessary.
5. Labor (in Canada) must change its policy and establish compensation on a more equitable basis.

Mr. Stadler, whose 71st birthday is on April 1, was educated in Germany. He toured North America from coast to coast in 1893 and returned to stay in 1907. He has been identified with a score of projects in U. S. and Canada from British Columbia to Newfoundland.

Mr. Stadler deplores the fact that this continent did not apply to its forests long ago the methods of conservation which proved effective in northern Europe.

"There can only be one uniform regulation for all the provinces and for such purposes it seems to me the Dominion government is the party to formulate a policy which probably can be carried out by the respective provincial governments," he said.

"We must disregard the old practice of getting, in the shortest period possible the most out of what has taken nature a hundred years or more to produce, and change our tactics to help nature to produce and preserve our raw material for the future.

"The preservation of power obtained from natural resources can safely be left to the producers of power, whether government or privately controlled, but their cooperation with the pulp and paper industry is essential.

"Collective labor agreements supported by legislation have come to stay, but before really effective cooperation is accomplished, labor has to revise its policy and establish compensation in conformity with effort rendered and ability of the employe. Old traditions of rate making will have to be replaced by a more scientific and equitable principle.

"Labor agreements will remain confined to manual work in the Canadian paper industry.

"A few of the companies who still do not fully appreciate the efficiency of a technically trained staff, will soon alter their policy and turn to the highly educated man when they observe the resulting economy.

"In spite of an anticipated surplus of labor, we must for economical reasons make further improvements to reduce the number of men employed for a given production.

Era of "Refinement"

● The industry is now past the initial stages of development, said Mr. Stadler, and has entered "a period of refinement."

"Technically trained men," he continued, "will have to take more responsibility in management—in fact, I believe men with technical training are best qualified for managers—if we want to achieve the object we are striving for, namely—

"To organize and cooperate to manufacture most economically the raw materials obtained from our still ample resources, and export the surplus to markets most beneficial to Canada, for no nation has the right to use and destroy raw materials without being adequately compensated.

"The mistakes made in the past by individual action must serve as a guidance in this promised new world which can only differ from the past by increased cooperation. Individualism must give place to extensive cooperation in which the governments will have a large part to play. But no government should attempt to go into details of direction and execution; this is better left to private enterprise. The past has demonstrated that a political organization cannot work as efficiently as one privately-owned.

"The much advertised and even accepted theory of 'Plenty for all' will be a disappointment to many.

"There can only be equality for all to a limited extent, but to rise above that level, individual effort will still be a factor.

"With the above as an underlying basis, private management can determine the action to be taken to obtain the best results for what is to be done in the immediate future without waiting for Government action."

Pulp Markets

● In a separate communication to this magazine, Mr. Stadler expressed concern over the failure of many Canadian mills to adopt improvements which are proving of advantage to European mills. He warned that American buyers of pulp are not "philanthropists" and said general opinion was that after the war government controls would make way for a free market.

"I see no reason why Canadian mills should not be able to make as good a sulphite pulp as the European producers, the more so because many Canadian mills have a better quality pulpwood," he said.

He said Canadian mills in the following ways, do not take advantage of developments in use in nearly all European sulphite mills. He explained these as follows:

1. Only one Canadian mill recovers some of the heat released when blowing the digester.
2. Heat which becomes available when burning sulphur is recovered in only two American sulphite pulp mills.
3. How long will Canadian mills be able to ship wet sulphite pulp to remotely located customers, pay freight on water and still have a profit, after Scandinavian pulp returns to the United States market?
4. Canada has an abundant supply of pyritis, advantageously located to most existing mills, yet only two Canadian sulphite mills, he says, are making use of this raw material.

Thermo-dynamics and chemistry will be more important factors in existing and new mills, he predicted.

Quebec Tightens Forest Cutting Controls

● Tightening up of the controls exercised by the Quebec Department of Lands and Forests over cutting on crown lands is provided for by a redrafted regulation which appears in the latest issue of the Quebec Official Gazette.

This provides that the forest engineer who prepared the seasonal cutting program must be responsible for carrying it out, and make a report after the cutting has been done showing that all the prescriptions of the working plan have been carried out.

This post-cut report must be sent the department within three months following the end of the forestry operations, which means May 1 to July 31.

D. M. Shapleigh Joins Paper & Industrial Appliances

● Paper & Industrial Appliances Inc., New York, N. Y., announces appointment of D. M. Shapleigh as director of technical sales.

Mr. Shapleigh was associated over a long period of years with these prominent firms in the industry: American Bewoid Division of Bulkley Dunton Pulp Co., Inc., Paper Makers Chemical Div. of Hercules Powder Co., American Delthirna, Inc., and technical sales for Brown Co.

His activities will be devoted to technical sales and service for all P&I products, including the Defibrator-Chemipulper, Roll-O-Finer, Brammer Control and Smith-Egan Beater.

An Intimate Picture of Industry Controls In Canada and Their Future Prospects

● While believing unreservedly in free enterprise as a prime principle in an industrial economy, Canada's pulp and paper men feel that, by and large, wartime controls have been beneficial and they aren't in a hurry to see all of them arbitrarily removed.

"Government controls should be eliminated after the war wherever possible, but supervision should remain," one leader of the industry in Quebec told a representative of PULP & PAPER INDUSTRY recently. "Government-supervised allocation should stay for the time being anyway and price controls maintained to prevent pirating and ruthless price-cutting from which the industry used to suffer."

It is fortunate that this attitude seems generally acceptable to tough-minded Donald Gordon, boss of Canada's Wartime Prices and Trade Board, who has been having some heart-to-heart talks with pulp and paper men in Montreal and Ottawa. Mr. Gordon, although a professional government official who in peacetime is one of the top men in the Bank of Canada, would admittedly like to see the government get out of the field of industrial control as soon as feasible.

"Since it takes time for industry to plan for the postwar period we want to give industry notice that the time is coming when it will be on its own again," says Mr. Gordon. "The time is coming when industry cannot look to the government for guidance. We are not attempting to organize a planned economy."

This appears to be the general policy of other government boards such as the Timber Control, although there is a feeling at Ottawa that while procurement controls will vanish after the war if not before, price and export controls are likely to remain indefinitely.

"We'd be in a fine fix in Canada if we should suddenly abandon control over prices and let down the export bars," the writer was told by an official close to the Timber Control. "We'd have a job retaining any logs or lumber or pulpwood in Canada; it would all go to the higher-priced United States market."

So far as lumber is concerned, the Canadian government hopes to spark postwar recovery through development of domestic construction

JOHN PETER MACKENZIE, formerly of Vancouver, B. C., who passes on all Canadian pulp and paper equipment applications from his Ottawa office.

on a broad scale. Obviously, large quantities of lumber will be needed at home to carry out that objective. As for pulpwood, there is a general tendency in Canada to retain it for domestic manufacture wherever possible, and there will be far more encouragement for United States companies to establish subsidiary producing units in Canada as is now being done rather extensively in Ontario, than for exporters of raw logs, and pulpwood.

No Export Issue In East

● Controversy over pulpwood export, while a live one in British Columbia for some time owing to the competition among sawmills as well as pulp plants for the same logs, is not so noticeable in eastern Canada. Regulations there are variable, but generally speaking the system is that independent loggers are permitted to ship about 50 per cent of their output to the United States, the balance to be used in Canada, and no one seems to have suffered noticeably from this arrangement.

So far as the west coast is concerned, there is no inclination on the part of the Timber Control to liberalize its present export allowance of 32,500,000 board feet of pulpwood logs this year. "This spring," Controller A. H. Williamson told PULP & PAPER INDUSTRY, "we'll examine the situation again and set a new quota in the light of conditions then prevailing."

But while members of the Timber Control are convinced of the need for continuing regulation most of their personal inclinations are to return to their peacetime role as soon as possible. Mr. Williamson and his assistant Jack Lamprey, and Hec Munro, are Vancouver men. Their associates, Clifford Crispin, G. Peter Kaye, Frank Hall and Ralph Shaw, all Vancouver men, too, recently returned to their old jobs.

David G. Stenstrom, former pulp and paper consultant in Vancouver is deputy newsprint administrator at Montreal. When Canadian pulp and paper men seek the necessary permits for new construction the man they have to see or write to is John Peter McKenzie, who before the war was manager of Hamilton Bridge Western, Ltd., in Vancouver. His office is in Ottawa.

Montreal Still a Center

Even the war has not deprived Montreal of its distinction as headquarters of the pulp and paper industry in Canada, and when the government set up its pulp and paper administration it yielded to this basic fact and instead of attempting to run things from Ottawa opened offices for Guy Hoult and Mr. Stenstrom in the towering $75,000,000 Sun Life building.

A person interested in calling on pulp and paper executives could

Timber Controller A. H. WILLIAMSON (left), who decides on how much pulpwood can be exported to U. S., and JACK LAMPREY, his assistant.

quite easily spend a week in the Sun Life Building and still have many men left on his list. Most of the big corporations engaged in the pulp and paper industry have their suites of offices there — Canadian International, Consolidated, St. Lawrence to name only three. The Canadian Pulp and Paper Association, with Secretary-Manager A. E. Cadman in charge, has its location there, and on other floors are the offices occupied by President Charles Vining, General Manager Paul Kellogg and Secretary H. Cunningham of the Newsprint Association of Canada.

It's obvious that a better feeling of co-operation and a more realistic state of unity prevails in the Canadian pulp and paper industry than ever before. Conditions resulting from the war are partly responsible. The companies simply had to pull together and, having cheerfully adopted that practice for the national good, they are finding that it pays in a business sense as well. Administrator Hoult told PULP & PAPER INDUSTRY that, in his opinion, there has been a pronounced improvement in the relations between Canadian newsprint producers and consumers in the the United States as well.

"Our basic problem," said Mr. Hoult, "is still one of supply. "We've got the timber; it's still a question of getting it out of the forest and to the mills. During the past year we had a water shortage to add to the complications in the east, but that is improving. The over-all manpower situation has shown improvement, especially in Quebec. It's still pretty tough in Ontario."

Significant of the prevalent harmony in the industry was the formation, in October, of a joint executive board to serve when required as the representative body of the whole industry in matters common to the two established trade associations — the Canadian Pulp and Paper Association and the Newsprint Association of Canada.

Charles Vining, of the Newsprint Association, is chairman of the executive board, and E. Howard Smith, of the Pulp and Paper Association, is vice-chairman, with membership equally representing the two associations.

Since members of the two associations constitute more than 98 per cent of all pulp and paper producers in Canada, the new board will be representative of the entire Canadian industry and will act as the directing authority of general industry committees.

Members of the new Board will be elected each year at the annual meeting of the associations.

The present members, elected by resolutions of both association executive bodies, are as follows:

L. J. Belnap, president, Consolidated Paper Corp., Ltd.; George W. Brown, president and general manager, Gair Company Canada, Ltd.; A. E. Cadman, secretary-manager, C.P.P.A.; G. L. Carruthers, assistant general manager, Interlake Tissue Mills Co., Ltd.; G. T. Clarkson, receiver and manager, Abitibi Power & Paper Co., Ltd.; Paul E. Cooper, president, Pacific Mills Ltd.; Aubrey Crabtree, president and general manager, Fraser Companies, Ltd.; Harold S. Foley, president Powell River Co., Ltd.; G. Gordon Gale, president, The E. B. Eddy Company, Ltd.; John H. Hinman, president, Canadian International Paper Co.; Col. C. H. L. Jones, president, Price Bros. & Co., Ltd.; Paul Kellogg, general manager, N. A. C.; Robert P. Kernan, president Donnacona Paper Co., Ltd.; E. M. Little, general manager, Anglo-Canadian Pulp & Paper Mills, Ltd.; F. G. Robinson, president, Riordon Sales Corp., Ltd.; J. P. Rolland, vice-president, Rolland Paper Co. Ltd.; C. H. Sage, president, Spruce Falls Power & Paper Co., Ltd.; E. Howard Smith, vice-president Howard Smith Paper Mills, Ltd.; Charles Vining, president, N.A.C.; R. L. Weldon, president, Bathurst Power & Paper Co., Ltd.; A. F. White, chairman, St. Lawrence Corporation, Ltd., and C. R. Whitehead, vice-president, Consolidated Paper Corp., Ltd.

East and West Canada Are Getting Together, Interchanging New Ideas in Woods Operations

● Four thousand miles may separate the principal pulp and paper producing areas of western and eastern Canada, but this gulf has been shortened during the past few years by a closer association between the men in the industry on the west ocast and in the eastern provinces.

"We have a lot of things in common," Ed. Flynn, manager of Price Brothers, Quebec City, told PULP & PAPER INDUSTRY recently. Price Brothers is a century-old organization, holding 8000 square miles of Crown grant timber and operating several mills.

"Timber in the west is bigger," continued Mr. Flynn. "Woods labor and general nature of the country is in sharp contrast with the east, but basically the pulp and paper people are thinking about the same set of problems whether they are in Quebec and Ontario or on the Pacific coast."

At the moment, eastern pulp and paper men are keeping their eyes trained on the west coast's developments in power saws, hydraulic barkers, trucks and tractors. The west has pioneered the road for these to a far greater extent. The greater size of west coast timber and the rough topography have in themselves been potent factors in encouraging experiments with new types of equipment.

In some respects, of course, conditions in the woods in the west and east are hardly comparable. Much of the eastern timber is small and it is harvested in country veined by small rivers and dotted with lakes.

"One of the things we can't do economically in the east is establish the type of semi-permanent logging camp which is such a typical part of the set-up out west," said one woods boss. "We can't do it for the same reason that we can't afford to operate logging railways. Most of the individual watersheds where we systematically operate are relatively so small that we couldn't afford to develop more than a temporary operation." Eastern Canadian pulpwood camps have an entirely different type of labor to deal with, too. Nearly all are French-Canadians who spend most of the year not in the woods but on their small, marginal farms.

"The time has gone when most of our woodsmen are willing to find their own way of getting to camp," said a veteran woods manager, who recalled that in the old days he used to walk through the snow some 20 miles a day just to get to and from the job. Today, the Quebec and Ontario logger is provided with transportation—or he does'nt work.

"The west would certainly be doing us a favor," said C. C. Bigonesse, general manager of Gulf Pulp & Paper Co., Quebec, subsidiary of Imperial Paper Mills, Ltd., of London, "if it showed us how to develop an army of all-year-round loggers."

However, a new exploratory attitude is gradually taking hold in the east. Many of the larger companies are doing their best to encourage their woods workers to stay with them longer than the customary three to six months and are providing an opportunity for the men to obtain specialized training to fit them for more responsible and lucrative positions.

"It would be a fine thing," remarked one operator who has been studying conditions in eastern woods camps, "if more pulp and paper company executives would leave their ivory towers every two or three months and take a trip to the woods and see for themselves how things are going. After all, 50 percent of the cost of producing pulp is spent in the woods."

There is a growing interest in all types of truck and tractor transportation. Truck manufacturers have a fertile field in Ontario and Quebec, for some of the companies there have found that the all-year truck road provides greater flexibility in operation than the river. Some

progressive operators are considering the advisability of reducing manpower-handling costs by loading out log lengths instead of cutting them in the forests to the customary four-foot lengths. Others are seeing the advantage of bundling the four-foot lengths in two-cord lots and moving them by mechanical means, thus eliminating the time and labor-consuming practice of moving each piece of wood by hand every time it is moved from forest to river or truck-load.

Manufacturers of logging equipment are keeping abreast of requirements and they have shown just as much ingenuity, especially in recent years, in the development of light, flexible gear as they have in connection with the heavier, more stationary units. Perhaps the experiments now being carried out on the west coast with light equipment for the handling of salvage from primary logging locations will provide an interesting testing ground and be the means of producing devices for the woods of Quebec and Ontario. The work being carried out along this line on Vancouver Island by Powell River Co. and Comox Logging & Railway Co. is being followed closely in the east.

The east is also watching experience of the west and southern U. S. with power saws.

"If someone can produce a portable power saw weighing about 50 to 60 pounds and pretty nearly fool-proof, he should be able to sell a host of them down here," the woods manager of one of Canada's biggest pulp and paper organizations told PULP & PAPER INDUSTRY in Montreal. "Such a saw should provide protection from exhaust and be equipped with a shoulder pad for comfortable carrying. A really efficient power saw should reduce our costs 20 to 25 percent."

F. Faure, vice-president of Consolidated Paper Corporation, in charge of wood production, points out that as long ago as 1929 power saws were being used in the eastern woods, more as an experiment than anything else.

"We look to the west for ideas and methods in respect to log handling and transportation," said James Perrin of Brown Corp., Quebec City.

As a matter of fact, the industry is so thoroughly "sold" on the idea of adopting progressive methods that it has set up a special committee on mechanization headed by Gordon Godwin, formerly in charge of logging for the Quebec North Shore Paper Co., and engineers for this committee will be making a survey of west coast mills and woods operations during the coming months with a view to adopting in the east some of the more promising ideas.

FRANK E. JEFFRIES, who has retired as head of Tacoma, Wash., Div., Blake, Moffitt & Towne, formerly Tacoma Paper & Stationery Co.
His decision was based on desire for leisure and time to attend to personal affairs, said O. W. Mielke, General Mgr.
Mr. Jeffries joined BMT 43 years ago, coming from John Leslie Paper Co., Minneapolis. He headed Tacoma office since 1910.
At annual BMT meeting, Mr. Mielke was elected President; Lyman V. Hall, Vice Pres., and A. B. Coulter, Sec'y-Treas.

Silver Self-Sterilizing Surfaces Developed For Paper Food Wrapping and Containers

● Invariably a program designed to achieve benefits in a given direction will be found to produce additional useful results which perhaps were not at first contemplated. That is the nature of constructive effort. Benefits multiply. This axiom has been especially pronounced in the case of the systematic research campaign begun seven years ago by California Institute of Technology at Pasadena, in exploration of the possibilities for new industrial uses of silver.

Out of this program have come developments in the past year that are of great importance to the manufacture and use of sanitary paper wrappings and containers for foods.

The research activities were initiated by Robert M. Hardy, president of Sunshine Mining Co., in setting up a substantial financial foundation involving a program conducted by Robert A. Millikan, chairman of the executive council of the California Institute of Technology, and Dr. Alexander Goetz, director of the Rare Metals Institute of CIT. Dr. Goetz was in charge of investigations, which included studies of the effects produced by small silver ion concentrations in water purification, the use of silver for rendering ocean water drinkable, utilization of its compounds as a protection against metal corrosion caused by brine, and the composition of minute traces of silver with various neutral materials to produce self-sterilizing surfaces.

It is the latter activity which concerns the production and use of food wrappings and containers. Manufacturers of these products have long recognized the importance of the bacteriological danger. It was brought into the limelight some years ago when the use of paper drinking cups began to reach tremendous proportions. Government regulations had stipulated a high degree of purity of the water used in forming the pulp intended for drinking cup manufacture —a fact which explains why mills producing paper for such purposes are located only at water supply sources having a purity analysis that meets the government specifications.

To the credit of manufacturers of various kinds of paper wrappings and paperboards it can be said that they, too, have done everything in their power to turn out highly sanitary products. It has been shown that more than 100,000 organisms can be picked from a square inch of a surface that has been stored under unsanitary conditions.

New materials developed in the laboratory of **Rare Metals Institute** by Dr. Goetz and his scientific collaborators have proven, under strenuous tests, to possess strong germicidal action without being toxic or imparting any taste or odor.

Furthermore, certain plastics have been developed into which these mediums can be incorporated as pigments, so as to form a synthetic varnish, lacquer or paint which, bonded on a surface by brushing, printing, spraying or dipping, will produce a coating on which no bacteria can live more than a few minutes.

Not Injurious to Humans

● The coating is in no way injurious to human beings and does not spoil the flavor or taste of food materials brought into contact with it. For instance, it is pointed out that cheese and butter, wrapped in paper or cellophane that has been coated with the new material, will keep free from mold growth much longer — perhaps an additional two or three weeks — under customary handling conditions, even if the wrapper is exposed to unsanitary conditions.

The coating is insoluble in water, but has by itself no moisture-proofing qualities. It can, however, be applied to moisture-proof base materials or in addition to moisture-proofing coatings, on such types of surfaces as paper, fabrics, cellophane, Pliofilm, glass, wood, porcelain, ceramics, most metals, and to laminated products like artificial leather.

An important characteristic is that a specific kind of coating material is required for a particular kind of base. A material that is suitable for cellophane, for instance, would not necessarily be satisfactory for Pliofilm. The total quantity of silver which the surface material must contain varies widely with the intended use of the surface and with its intended degree of germicidal performance. The spreading factor of these pigmented plastics is quite large, illustrated by the fact that one pound of this material without solvent is capable of covering satisfactorily about 2,000 square feet of cellephane for wrapping purposes.

The cause of the germicidal performance of these coatings are of a highly technical nature, but a layman's explanation would be about as follows: While an extremely small quantity of ionized silver is highly effective in the killing of germs, a lasting self-sterilizing surface depends on incorporation of an adequate supply of atomic silver under the outer skin or surface of the coating, together with a large supply of an oxidizing agent, which acts to replenish the surface continually. This under-surface supply of silver and oxygen is necessary because many organic colloids, especially the proteins rich in sulphur, would disactivate the surface unless a process of replacement and oxidation was provided for.

Five Objectives

● Consequently it is necessary to use a surfacing material which accomplishes five things, namely:

1. Exposes at the surface only a small fraction of the minute silver content in the coating.

2. Holds this fraction in a form practically insoluble in water, but available to proteins.

3. Renders it available to contacting organic matter.

4. Protects the unexposed supply against chemical attack.

5. Permits replacement and reactivation by diffusion.

It is possible to vary the rate of replacement by the choice of the proper resin and its concentration and the quality and type of filling material. The resin also contains stabilizing and plasticizing substances; neutral filling materials are required where a protection of the interior of the material against photochemical effects on the silver content is needed.

A surface coming in contact with wet foods having a large protein content will require a higher replacement rate but a low water permeability in order to prevent premature exhaustion of the silver supply in the coating, whereas dry surfaces require a certain property of water retention. It is obvious that a surface material which has to sterilize only once, as is the case in expendible food packaging, has to have those qualities to a very much lesser degree than materials which have to act over and over again.

Therefore in determining the particular kind of coating for a given purpose, it is necessary to strike a compromise between the rate of sterilization per unit area, the rate of replacement and the length of service the surface is intended to give.

The killing of mold is quite different from the destruction of bacteria, but the material is none the less effective. Laboratory tests conducted for over a year gave definite results. Inch-square areas on cellophane treated with the coating materials were free from mold, though completely surrounded by mold cultures implanted for test purposes. In some cases the mold was so thick that it slightly overlapped the border of the treated areas, but in no case ventured farther than the outer edge.

Mold suspensions containing high concentrates of spores are quickly sterilized in all suspending media except nutrient broth and milk. It takes fifteen to thirty minutes to kill bacteria on a surface suspended in milk, as compared to about two minutes in water. This illustrates the greater resistance to bacteria when milk is the food product to be packaged. Nevertheless the coating does kill the germs, which after all is the important thing.

Color Raises Problem

● In connection with the use of this material for coating the inside of paper milk bottles, it must be considered that the material is dull black and opaque, consequently there may be room for doubt as to whether housewives will accept milk if paper bottles have a black interior. Time will tell.

Also, the black color of the coating material might be objected to by those packagers of food products who depend largely on the visibility feature to sell the merchandise. Time will have to settle that question, too. But transparency in many cases is undesirable because the ultra-violet rays in light deteriorate some foods, therefore it is necessary to pack them in tinfoil, tin cans, opaque paper bags or containers made of paperboard.

However, in offsetting the lack of visibility is the fact that the black color of the coating offers an excellent background for colored labels printed on cellophane or other transparent papers. Or, if black is not desired as a background, white or any preferred color may be used between the design of the label and the coating material with attractive results.

As a sanitary coating material for the interior of containers of bulk foods, there can be little doubt of its cordial reception by all concerned. The black color of the coating should not be objectionable to hotels, institutions and other large users of bulk foods. In fact, it is a reminder that the container has been specially treated to kill germs.

Furthermore, a potential market of huge proportions is indicated by the tremendous growth of the cold-packing industry in recent years. Frozen foods, stored at harvest time and released to consumers as required, serve to stabilize the market both as to supply and prices, and the cold-storage system may even be the means of preventing large-scale field spoilage of food when conditions make its impossible to process or market it immediately.

The larger containers hold about thirty pounds of food and should be interior-coated after the container is manufactured.. It is of course possible to coat the paper prior to its conversion into containers, but the conversion process undoubtedly would cause breaks in the coating and thus impair its efficiency.

An important consideration is the extremely low cost of the coating material. A small quantity spreads over a surprisingly large area and, compared to the value of the service rendered, the cost of the surface material is practically negligible.

The choice of silver as the base material is dictated by its advantage. While both gold and copper share the germicidal property, silver is preferable because of its lack of toxicity as compared to copper, and its lower cost than gold.

Jim Hyde's Boy Is Rifle Champ

● James A. Hyde, 17 year old son of James B. Hyde, of the Central Technical Department, Crown Zellerbach Corp., Camas, Wash., recently won the national junior rifleman's championship in a nationwide contest conducted by the Evergreen Junior Rifle Club.

All Wages in War Bonds

● Amede Hofkins, 65, with two sons in service in Europe, returned to work from retirement at Kimberly-Clark Corp., Kimberly, Wis., but receives no check. He asked that his entire wages be invested in war bonds.

Charlotte Jones Ill

● Miss Charlotte Jones, secretary of Local 309, International Brotherhood of Paper Makers, Bellingham, Wash., was reported to be very seriously ill early this month.. Miss Jones has taken an active part in the local for employees of the Pacific Coast Paper Mills.

Fibreboard Products Sales Force Shifts

● Several personnel changes took place last month at the southern district, Fibreboard Products Co., Los Angeles, according to L. E. Grosjean, sales manager, southern district. Jean Arrasmith, from the Portland office, and Mel Thiele, from the San Francisco office were transferred to Los Angeles, to become sales representatives. Both have been with Fibreboard since 1927. H. R. Turrittin was shifted from the Los Angeles sales force to that of the Portland district.

Mr. Grosjean himself is a comparative newcomer to the southern district, having relieved O. C. Majors as sales manager, southern district last year after five years as manager in the Honolulu office. Mr. Majors was transferred to San Francisco to become assistant general sales manager, working under E. J. Farina, vice president in charge of sales, and W. H. Thomas, general sales manager.

Kimberly-Clark Sales Reorganization on Coast

● Back in his old home town is H. P. Westler, sales manager, Western division, Kimberly-Clark Corp., which had maintained Coast headquarters for 21 years in Los Angeles. These now occupy a beautiful suite in San Francisco's newest skyscraper, the Stock Exchange Building. Reason for the move was the more central location of San Francisco on the Coast.

Mr. Westler, who assumed his position with Kimberly-Clark just a few months ago, is no stranger to San Francisco, because for the past 20 years he had been connected with Blake, Moffitt & Towne, San Francisco division, in the printing paper department, and at the time of his resignation he was sales manager of that department.

Under Mr. Westler is J. O. Moen, district sales manager of the crepe wadding division. Also in the new office is C. D. Ahern, who had been with the Everett Pulp & Paper Co.

Mr. Westler planned a trip to Neenah, Wis., headquarters of the company, this month, and when he returns on January 29, he will be accompanied by Jack R. Kimberley, vice president.

Lindsay Wire Old Timers Form Quarter Century Club

● Twenty-nine employes of the Lindsay Wire Weaving Co. of Cleveland who have more than 25 years service have formed the Lindsay Quarter Century Club. They average 32 years' service actually, their total years in employment being 928.

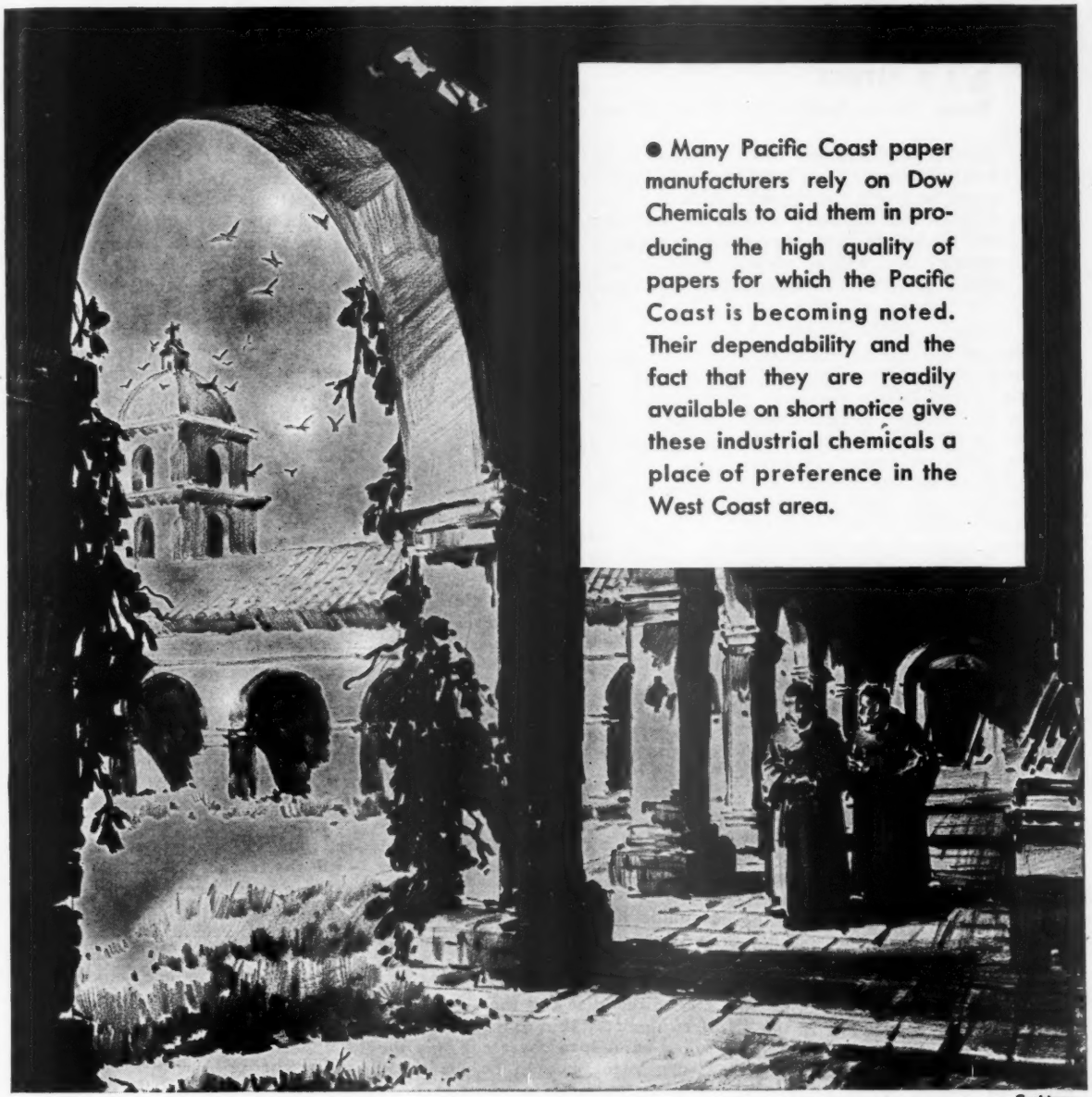
President A. Fred Crossman presented wrist watches to each member at a dinner at the Cleveland Club. Harry H. Field, treasurer of the company, was elected president of the club.

Sidney Robison Joins Western Precipitation Corp.

● Sidney J. Robison recently retired from his position of chief engineer of the Universal Atlas Cement Co., and has joined the staff of Western Precipitation Corp.

Mr. Robison will make headquarters in Chicago and will devote his time to special problems relating to the adaptation of Cottrell Electrical Precipitators and multiclones in the heavy industries.

Bear Brand Chemicals for the Western Paper Industry



● Many Pacific Coast paper manufacturers rely on Dow Chemicals to aid them in producing the high quality of papers for which the Pacific Coast is becoming noted. Their dependability and the fact that they are readily available on short notice give these industrial chemicals a place of preference in the West Coast area.

Capistrano

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CHEMICALS INDISPENSABLE TO INDUSTRY AND VICTORY

Organization of a Modern Paper School Which Mills in U. S. and Abroad May Emulate

By A. G. NATWICK
Dean, Crown Willamette Paper School.

This article was written for presentation at the 1945 Annual Meeting of TAPPI, which was cancelled at request of the government because of travel conditions. At least two big pulp and paper companies in the West and South are now organizing new paper schools in this country and others abroad have expressed interest in details about the pioneer school described in this article.

IN the late summer of 1933 the idea of establishing a course of instruction at the Crown Willamette Paper Co., Division of Crown Zellerbach Corp., Camas, Wash., was conceived. The autumn of that same year saw the beginning of an educational project which has for the past twelve years been of benefit to those of our employees who were deprived of a college education or in many cases a high school education, as well as to those who have obtained their degrees in science and engineering, and to the company which employs them.

The Camas mill, employing 2,300 persons—450 of whom are women, is situated on the Columbia River, about twenty miles east of Portland, Ore., and is the largest operating unit of the several Crown Willamette mills. At this plant an extensive range of specialty papers is manufactured from the mill's own production of groundwood, unbleached sulphite, bleached sulphite, sulphate and semi-bleached sulphate pulps. The mills are producing 340 tons of bleached and unbleached sulphite, 200 tons of sulphate, 55 tons of groundwood, and 453 tons of paper, besides conversion of large quantities of bags, napkins, toilet tissue and towels. The number and range of grades manufactured is large, which circumstance has fortunately provided a distinct advantage in the development of the Paper School. The scope of the curriculum of instruction has thereby been unusually broad, extending itself into phases of pulp and paper manufacture not normal to many mills. The student is given the value of instruction by actual observation of operations on many diverse phases rather than being obliged to seek more abstract and thereby less assimilable methods of book instruction alone. The scope of opportunity which a mill is able to offer to students who seek self-education is obviously closely related to the degree of the school's success.

The major reason for establishing this study course was due to frequent requests from employees for some arrangement whereby they might gain a broader knowledge of the pulp and paper industry, of their own work and its relation to the complete operation.

Interest was expressed in the possibility of gaining knowledge of the industry in all its phases—from the tree to the finished product, sales of the product, and uses of the paper. There was no particular information available which might be a guide to starting a study course such as seeemed to be necessary to meet the requirements of the employees in this particular plant. We recognized that this must be a pioneering effort, and that it should be broad enough to cover not only the Camas plant, but all of the paper industry.

● ***The 12th annual graduation dinner and ceremonies of the Crown Willamette Paper School were held in Nora Self Hall, Camas, Wash., March 15 under sponsorship of Crown Zellerbach Corp. Our report on this event will be published next month.***

The first notice that such a school would be started appeared on September 18, 1933, and departmental supervisors were asked to select a certain number of students from each department so that the total would not exceed forty. In a comparatively few days we were advised that 190 had applied, and it was recognized that this school could not be restricted to certain employees who might be chosen by the foremen and supervisors. We, therefore, decided that the course should be open to any employee of the Crown Zellerbach Corp.—not only at the Camas plant—but in the Portland and West Linn, Ore., areas. It is our opinion that the primary reason for the successful conduct of the school from its inception has been due, perhaps, to the fact that the course has been available to any who wished to take advantage of the opportunity for further education.

During the first year of the school 24 classes were held and lectures were given by supervisors from our plant, as well as by capable operators from other plants, on subjects covering the whole operation in general from wood, manufacture of pulp and paper, converting and on through management problems. We felt that this one educational effort would take care of the situation for a few years, at least, until another group of students showed some desire to learn more about their industry than would be possible by working in one of the departments of the plant. However, the following year a great number of requests came to us for a continuation of this Paper School Course by those who had completed the First Year.

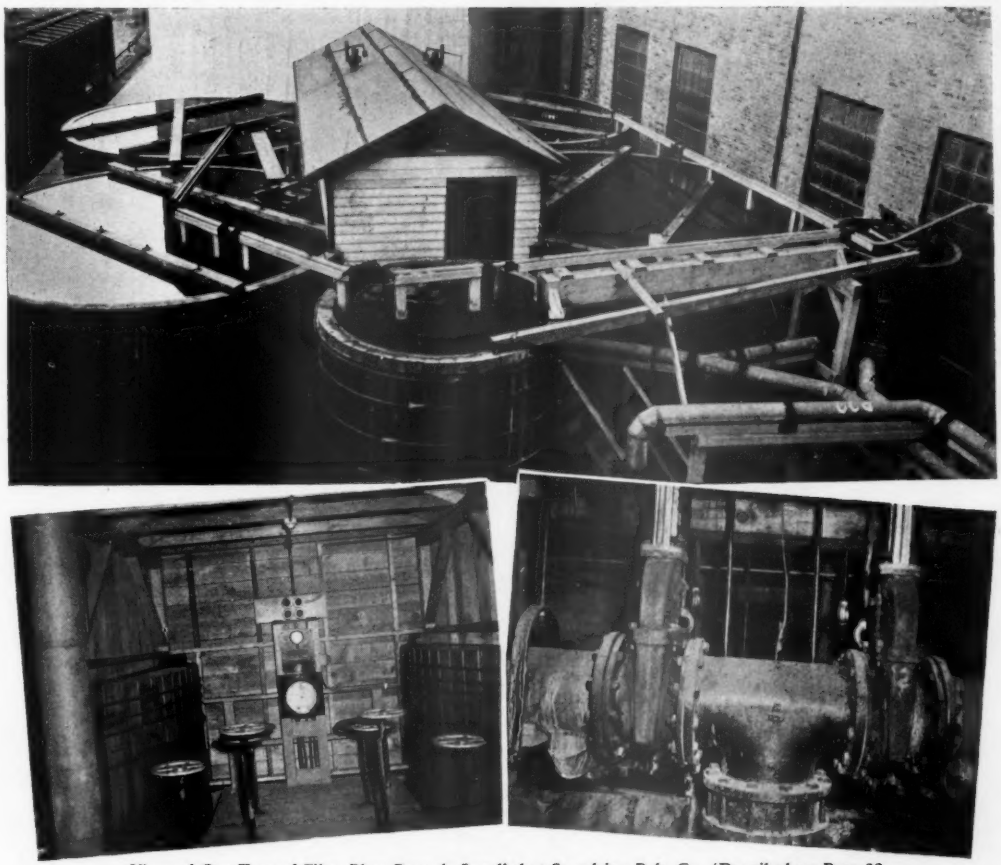
Subsequent school terms, therefore, have begun each year the latter part of October and continued until the second week in March covering a twenty-week period.

Thus came the organization of the second year class and subsequently the third and fourth year classes, the latter of which comprises an earnest group, selected naturally through the rigors of the requirements for completion of the previous three years' study. It may be said, however, that the student who finally completes the fourth year represents an employee so well informed in his better knowledge of the phases of pulp and paper manufacture as to command particular consideration when selection of men for promotion to larger responsibilities is in order. The joint effort expended thus does become of mutual benefit to the employee and the mill.

Role of Foremen

● The Crown Willamette Paper School is naturally limited to employees of the various Crown Zellerbach organizations, and is unique in one respect in that it has incorporated a foreman-employee relationship not generally found in organization and conduct of paper schools. This relationship, the value of which is

WATER PURIFICATION



Views of One Type of Filter Plant Recently Installed at Soundview Pulp Co. (Described on Page 32, February 1945, PULP & PAPER INDUSTRY.)

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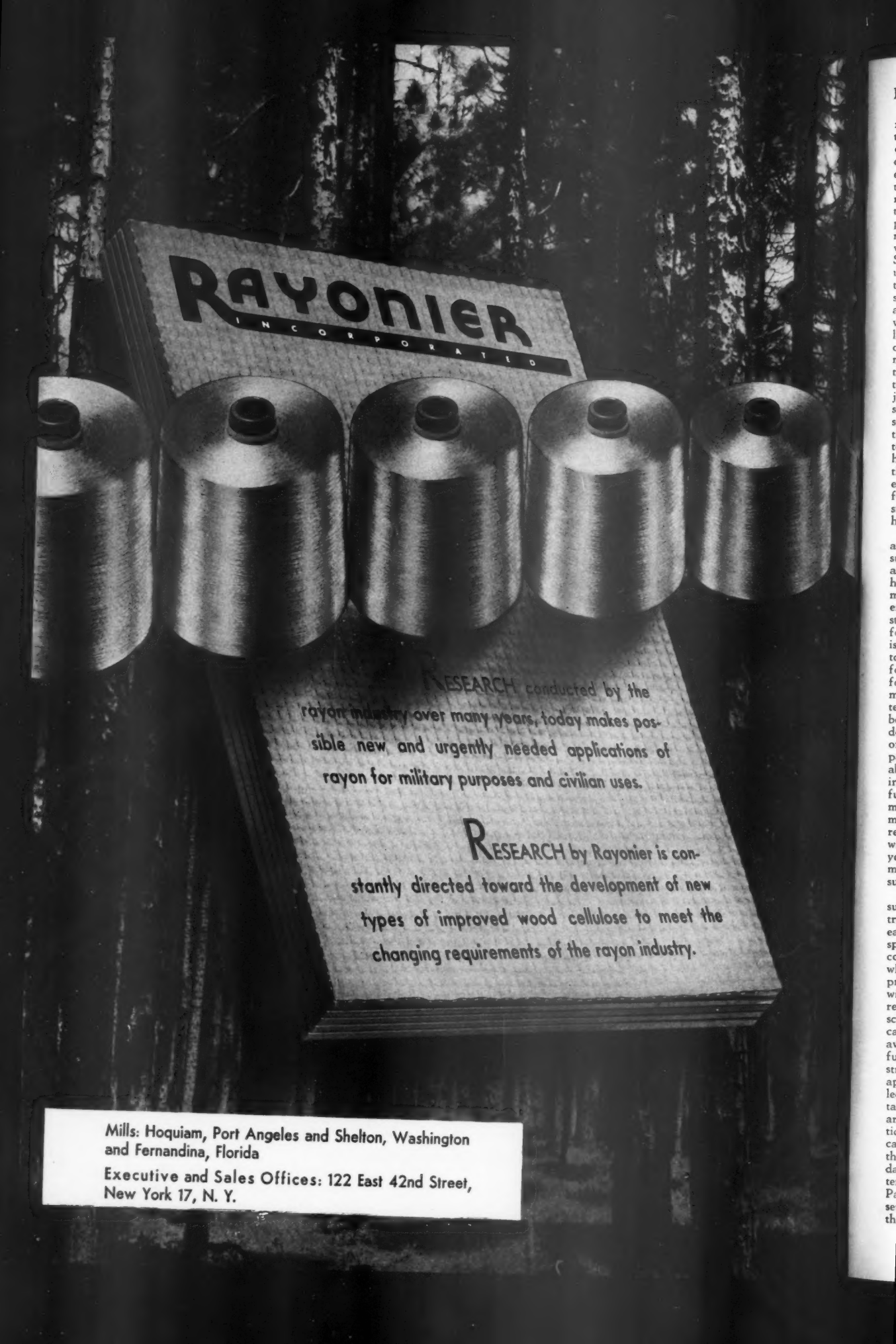
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now so clearly recognized, has arisen from the method of instruction chosen at the outset, and was not deliberately conceived in the first place, although it is now emphasized and encouraged. We refer to the conduct of the school whereby the mill superintendents and foremen are the lecturers and instructors in their particular fields, without recourse to formal method of textbook instruction. Obviously, the conduct of four such Paper School courses places a heavy demand upon extra time of those charged with the responsibility of carrying on the school. A natural temptation, to be avoided, is to resort to the more conventional method of instruction; namely, placing all lecturing into the hands of one or two designated individuals who might qualify even better in the art of teaching and who would devote their time to a paper school as their regular job. On the other hand, Camas mill superintendents and foremen have themselves become increasingly proficient in their presentation of the subject matters. A textbook called "Making Paper" has been compiled using transcripts of the lectures given by men who are skilled, each in his own field. This book furnishes a complete reference for the student to pursue in collaboration with his current lecture.

This does not mean that available literature on pulp and paper manufacture of such nature as to be assimilable by the average mill employee has been denied him. On the contrary, a large range of material is provided for his further reference. The essential elements of the instruction, however, which he must satisfy for recognition as a graduate of a course, is taken from the material presented to him by his own superintendent and foreman and by the superintendents and foremen of other operating units of the mill. We have come to regard this system of instruction as peculiarly effective, because the material presented to the student is thus the fruition of many years of practical operating experience on the part of able men who know considerable about pulp and paper, but publish nothing. A few hours of instruction in the fundamentals and intricacies of paper machine operation made clear by a paper mill superintendent, for instance, whose record of service is over many years and whose responsibilities have grown in those years, can hardly be compared with a method which sought to present the same subject matter from a textbook.

It is probable that a degree of the success of the Paper School may be attributed to the liberal policy adopted early by the mill management in respect to financial outlay annually for its conduct and maintenance. No charge whatever is made to the student, he being provided at the beginning of his course with a copy of the textbook which is required to be returned at the end of the school year. However, if a student should care to buy one of these books, they are available. Instruction by illustration, a fundamental principle of teaching, is stressed. At each lecture where such are applicable, exhibits are set out for the lecturer's use. Photographs, drawings, tables of data, and microscopic slides are provided and made use of by practically every lecturer. This material is carefully filed and continually added to, thereby making available more complete data from year to year. In further extension of instruction by illustration, the Paper School has provided itself with a set of colored motion pictures showing the complete paper-making operation of the Camas plant from log rafts to the converted product. These moving pictures have added much to the interest and instruction for the entire course.

Lieut. ELTON B. JONES, U. S. Naval Reserve, American Bank Building, Portland, Ore., where he is assigned to Labor Relations for the Navy.

Lieut. Jones is well known in the Northwest pulp and paper industry, having worked in various departments of the Camas, Wash., mill of Crown Zellerbach Corp., between 1922 and 1932. In 1933, he graduated from University of Washington Law School and practiced law in Seattle until he went into the Navy.

His father, HARRY E. JONES, has been in the Camas mill since 1906 and recently took over duties of Maintenance Engineer of the Steam Plant upon retirement of HARRY CLARK.

Course of Instruction

● The first year class is shown the motion pictures along with the lectures for the purpose of giving them a general idea of the complete mill operations. To the second year class, definite and specific details of the Camas operations are shown and studied by means of the motion pictures. The Third and Fourth Year classes do not use the pictures except to clarify some point in discussion. Several excellent industrial films are made available each year which are either directly or indirectly connected with the paper industry. Every opportunity is taken to invite prominent members of the industry, who may be visiting the Pacific Coast, to appear as Paper School lecturers and add their contribution of new information and points of view.

In the first year it is intended to present at a weekly lecture of one and one-half hours, only the elementary and broad picture of fundamentals of chemistry, physics, electricity, wood—its preparation for pulp making, and steam; the principles of the chief pulping processes, the place of water in pulp and paper making, the screening and bleaching of pulp, its preparation as furnish for the paper machine, the paper machine operation, paper finishing, paper converting, purchasing and mill management. No attempt is made in the first year to specialize. Lectures are prepared and delivered by mill superintendents and foremen each in his turn.

The course of study for the second year directs close, almost exclusive attention, toward studying wood preparation, pulp processing and paper making, specifically as carried on at the Camas mill without particular reference to pulp and paper making as conducted by other mills or other principles not in use at Camas. The enlarged features of the second year course which provide this emphasis are the moving pictures and mill visits. The second year students attend a weekly lecture of one and one-half hours and are also required to spend an equal weekly period in the mill in observation of that particular operation which had been covered in the previous lecture. Mill visits are made in groups under the guidance of a competent employee-instructor and at periods compatible with the employee's requirements of tour work. On this visit the subject matter of the lecture, which had already given the student a picture of the process, is now fixed in his mind twice over by visual perception.

Beginning with matriculation in the third year the student comes to depend largely on his own initiative and effort. Eight formal lectures are given, practically all of them by outside speakers—those on process and equipment usually by manufacturing representatives in allied industries who are authorities on the topics they discuss. Other lectures in the third year are those who are competent to discuss their subjects, such as officers from the unions and those who are employed in guiding human and labor relations in industry. Subjects covered are:

Industrial financial reports;
Wage economics of the paper industry;
Combustion;
Metallurgy;
Silvicultural methods in the production of pulpwood;
Conveying materials;
Human relations in industry;
Labor relations in industry.

● These contacts with men entirely disassociated from the mill organization provide the student with new viewpoints which lead to a broader scope of understanding. Each student is required to spend four hours a week, a total of 64 hours in mill study, allocated 16 hours each to wood mill, sulphate mill, sulphite mill, and beater operations in regular progression. Four evenings are devoted to general open discussion of problems in these departments, the supervisor of the department in question taking the chair. The mill studies required of this class are on an entirely different basis than the supervised mill visits of the second year class. The student is provided with a pass in his own name which admits him to all departments of the mill for his study at any time day or night. His aim is to apply himself to the particular department being studied as though he were preparing to become a responsible operating foreman. To be sure, this idea is scarcely fully realized except in the case of the more competent individuals; yet, it is surprising how well the student trains himself in the knowledge of wood preparation and pulp manufacture and develops in his powers of observation and interpretation.

The fourth year is entirely similar to the organization of the third year. The third year graduate continues his independent line of study as applied, now,

however, to phases of (1) types and operation of paper machines, jordanning and pumps, (2) finishing and converting of paper and shipping, (3) steam, electrical, and mechanical departments and (4) a phase most important for his knowledge; namely, what constitutes the quality of paper products in respect to the particular trade the mill serves, and the importance of quality maintenance. This requires an understanding of the whole subject of technical control. As in the case of the third year, outside speakers are invited to speak on subjects disassociated with the industry, but different from those discussed in the previous year, such as:

Principles of hydraulics, pumps and pumping;

Heating, ventilating and air conditioning;

Evaporation;

Instrumentation.

The fourth year student is also expected to attend lectures on wage economics of the paper industry, human relations in industry, labor relations in industry and industrial financial reports.

Executive Supervision

● Executive supervision and direction of the Crown Willamette Paper School policy is exercised through a board of regents, comprised of three members, a vice president, the Camas resident manager, and the West Linn resident manager. The immediate control and direction of curriculum and instruction is given to an assistant resident manager, acting as dean of the school, and the technical supervisor of the mill, acting as principal. The latter appointment is most advantageous to serve the purposes of this school, in that the technical supervisor has naturally at his command a more centralized view of the entire mill operations.

One professor for each course is appointed by the dean, principal and board of regents; however, in the case of the third and fourth year classes where more personal contact from faculty and student is necessary, each professor has an assistant. Four advisory faculty board members, who are so chosen because of their ability to direct contact with the various departments, make themselves available for any information or assistance that is required of them by the school. In addition to this there are thirty-two mill instructors who lecture to the four classes. There are usually at least twelve outside speakers lecturing to the four classes throughout the school year.

Registration and records of attendance are given to a member of the technical department staff as an appointed registrar, and the quality of work done by each student as reflected in his attendance to lectures and his examination records are closely watched through this office of registrar. one can appreciate that with from 100 to over 300 employee-students, the majority of them occupied in tour work where attendance to more than three successive weekly lectures out of four is almost out of the question, with the inconvenience 'of a ready contact with tour workers in matters of any individual consultation, it is necessary that the work of the registrar be carefully done.

It is, of course, important to know by what standards the student is finally judged as having completed the requirements of the respective courses. Students of the first and second year classes are examined regularly through written examination which they are permitted to prepare on their own time and with the aid of whatever textbook material or consultation they may choose. In these, the more elementary courses, it is assumed to be most important to the student's benefit that he has fixed in his mind a well defined picture of pulp and paper making operations by being required to review the instruction he has received, rather than to embarrass him with the possibility of discouragment by a method of examination whereby he would have to depend entirely upon his memory. It is the aim to be as helpful to employees who did not complete grammar school as to the college graduate, to the extent of his own enthusiasm for bettering himself in his knowledge of pulp and paper making.

Examination of the third and fourth year students is carried on in quite a different manner, it being felt that the students having passed through the two years of elementary study and having fulfilled the requirements of individual mill observation, should be able to write comprehensively upon any process or operation without recourse to notes or text.

Whatever earnestness the employee chooses to exert accrues to his benefit through the mill's personnel office, inasmuch as his Paper School record is filed therein and is taken into consideration in any selection for promotion to jobs requiring an increased sense of responsibility. Encouragement is also given through liberal presentation of awards. For example, the two men who are judged as having most successfully completed the requirements of the fourth year class are given the privilege of a week's trip of inspection and observation of the Pacific Northwest pulp and paper mills at the expense of the school budget.

The liberal policy of the mill management is extended into the graduation exercises at the end of the school year by having as their guests all of the students at a graduation banquet for the purpose of awarding diplomas and special prizes to those who have won recognition by scholastic achievement in their particular course. The best, speakers available in the Pacific Northwest are invited to address the students and doubtless the excellent talks that have been given in the past have been a source of inspiration to many, not only to carry on with their school work, but to more vigorous determination and effort toward bettering themselves for their particular field in the mill and the next progressive step in the line of advancement.

Interest Abroad

● Since 1941 the impact of war has been felt to such an extent that 200 students who had completed one to three years of paper school work are now found in the armed forces, while 35 of 155 who have completed the four year course are to be found in all parts of the world, fighting with the U. S. forces—many of them holding commissions up to the rank of lieutenant colonel. Even the faculty has contributed its quota and three of its 15 members are to be found in the U. S. Navy.

The fame of the Paper School has spread to many different parts of the world, and prior to the war requests for information came from the Scandinavian countries and Finland, and more recently we have had requests for information from India and several of the South American countries. It is, perhaps, noteworthy that in 1942 when the German and Russian armies were struggling to the death in Stalingrad, requests were received from the Russian government for full information on the Paper School.

In recent years an increasingly larger number of women have attended the school and find that this training is of particular value to those who have taken men's jobs in the technical department and to secretaries and stenographers in acquiring knowledge of the subjects which they are continually handling in correspondence and reports. Over the approximate 12 years of its existence, the school has served students ranging in age from 16 to 72 years, the oldest student being a mill mechanic who was completing his 48th year as an employee of the company. It is, perhaps, of interest to know that the average age of the students has increased from 26 years in the school year of 1939-40 to 35 years in the second year of 1944-45, which indicates a very substantial increase in the average age since Pearl Harbor. While this type of voluntary education seems desirable to persons of any age, it is not unusual for husband and wife to attend school together where both are employed in the mill, and also for father and son to go to their evening class and study the same subjects.

While the expenditure on this subject has been rather large over the period in which the school has been operating, we find that there has been a total of 1,608 student-school years completed and that the cost of a student-school year is slightly under $15.00. This includes all items such as the printing of the textbooks, the motion picture films, slides, projectors, and other necessary equipment.

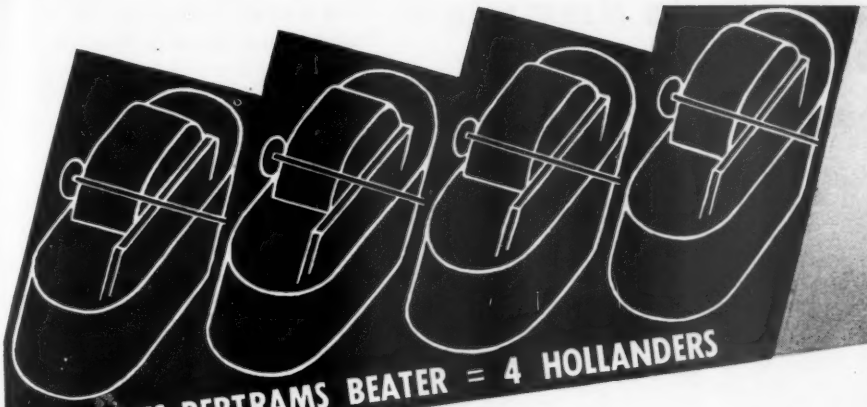
It has, indeed, been gratifying to have recognition by the University of Washington and Oregon State College to the extent that full credit is extended to the students for their work in the Crown Willamette Paper School. This may be applied as credits in the college of forestry and engineering, including chemistry and chemical engineering at the University of Washington, and in the schools of forestry, chemistry, chemical engineering and mechanical engineering at Oregon State College. A student must meet the scholastic requirements of the university or college and be enrolled in one of its several courses to take advantage of the credits which he or she may have built up.

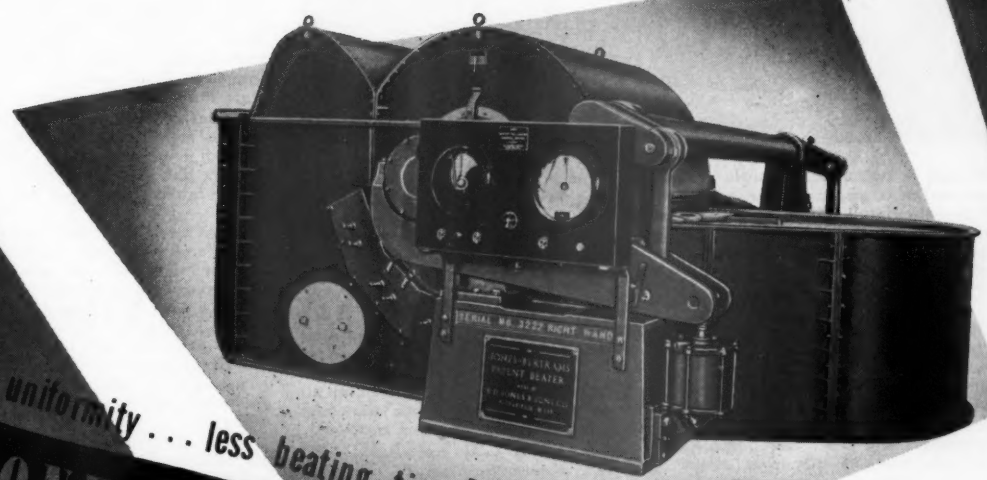
Through the foresight of executives and management, and with the unceasing efforts of foremen and superintendents as instructors and lecturers, we have built what may prove to be a future industrial educational pattern.

New "Daily" In Philly Will Use Book Paper

● A new daily news magazine to be known as "AM" is scheduled to start publication in Philadelphia in March. It will use accumulated stores of book paper, instead of newsprint. The American Publishing Assn., 1430 So. Penn Square, is the sponsor and owner of the paper stores.

Designed as "something new and unique in journalism," it will carry general news, with emphasis on trade news. Circulation will be frozen at 50,000 copies daily. Format is 9x12 in. tabloid, 20-24 pages daily.





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Canadian Sumner Iron Works Manufactures Castiron by Sorbo-Mat Process

Clif Olstead is pouring a sample of molten iron into a "wedge" for testing. The cast wedge is quenched, broken, checked for structure and the iron being melted is inoculated (if necessary)—poured into mixing ladle on right to produce the desired Sorbo-Mat Iron. Molten iron has been approved and is being poured from mixing ladle into pouring ladle and will be transferred for pouring into moulds.

● Taking guesswork out of production of castiron has always been an interesting subject to the foundry engineer and metallurgist. Grey iron is, and has always been, a popular material with engineers due to easy machining qualities, castability and low cost. While steel research, with its numerous alloy elements, has taken a prominent place, there are still many places where castiron is essential, provided the iron is uniform in structure, consistent in density with the hardness and strength controlled to suit each application.

The Sorbo-Mat Engineers of St. Louis, Mo., have spent many years in research of castiron and foundries in various parts of the United States are their licensed manufacturers. Within recent weeks, the Canadian Sumner Iron Works, Ltd., of Vancouver, B. C., became the first Canadian foundry so licensed.

At the Canadian Sumner Iron Works, Harry H. Kessler, one of the principals of the Sorbo-Mat Engineers, personally supervised installation and trained the Sumner staff in the methods.

The pulp and paper industry has numerous uses for iron of special structure to withstand abrasion, corrosion, acid, excess wear and other operations. It is to some extent to meet such special requirements that the Sorbo-Mat process was introduced at Canadian Sumner Iron Works.

Commencing with the drafting office, the designing of each casting to form part of the machine to be built was reviewed, with the result that minor adjustments are making easier molding and better casting. New pattern making methods were introduced under Mr. Kessler's tuition. The moldings of the castings, the manner in which cores were designed, built and fitted in the mold were treated with equal importance. Foundry sand, facing, molding flasks and other intricate details of castiron production all were modernized to produce the final result—controlled specification castirons.

Raw materials used are all carefully analyzed, accurately weighed, mixed in proper sequence and proportion, with temperature and air pressure made uniform and recorded by pressure regulators and controls. Each batch of molten iron is sampled and tested and, if necessary, the iron is inoculated with special alloys to bring the molten iron up to the desired structure, density and hardness for the type of castings to be made. Improved methods of pouring the molten metal were installed with the result that iron castings now being produced at the Sumner foundry have been most successful.

The engineer's conception of quality of an iron is usually based on mechanical properties derived from accepted standard tests such as tensile and transverse strengths, endurance limit or impact, etc. However, it is not generally known that the properties resulting from such tests are closely related to other features of metal as disclosed by examination of grain texture, machine surfaces and hardness indentation.

Sorbo-mat iron is, fundamentally, a modern castiron whose physical and mechanical properties are uniform, consistent and versatile of application. It differs from other high strength castirons in that it owes its quality to the control of metallurgical reactions in the furnace, and to the elimination of variables through precise technique associated with the treatment of molten metal.

How Crown Zellerbach's Suggestion System Works

● The suggestion system now in use at the Camas, Wash., mill of Crown Zellerbach Corporation is, in reality, the formal pattern for an organization-wide installation.

Suggestion boxes have been placed at the main employe entrance to the mill, at the main entrance to the bag foctory, and at the main entrance to the converting plant. Blank forms are provided.

As an added feature, bulletins and posters keep the employe conscious of his ability to better mill conditions and at the same time add to his income—if the suggestion merits consideration.

Once a week the suggestions are picked up from the three boxes and are immediately assigned to one of five investigators for appraisal and evaluation. The committee which handles the whole award system consists of Vic Gault, personnel director, chairman; Paul Millard, finishing room supervisor, secretary; J. L. Shively, bag factory superintendent; Frank Province, fire chief; Lexie Smith, boss machine tender; Miles Cady, field engineers dept., and C. F. Wilkeson, kraft mill pipefitter.

Copies of each suggestion are distributed as follows: 1. To the suggestor, as an acknowledgment; 2. To the investigator; 3. To the department supervisor. The original copy goes into the office files.

Every week the committee meets as a whole. and passes on suggestions, weighing the views of the investigator and the department supervisor.

If an idea is accepted an initial $5 award is paid. If the suggestion results in savings, the accounting department makes an appraisal. The suggestor receives 20% of savings during one year's operation, after deducting cost of installation.

Every suggestor receives a written reply, whether his idea is accepted or not, and written reports go to him if it fails to accomplish objectives.

Fred Carey received a $100 additional award for proposing a shaft puller for roll plugs.

Two other recent additional $100 awards went to John Holenberg for changes in a double fold machine and to C. A. Dobson for an improved method of transporting concrete.

Critical Transportation Situation Faces Industry

● Indications are that 1945 will be a most critical year in transportation for the pulp and paper industry, according to Franklin Hufford, transportation consultant, Paper Division, War Production Board, Washington, D. C.

The industry, in his opinion, is sure to experience a loss of production which may continue for several months. A number of factors are contributing to this condition. A great quantity of Northwest grain is waiting transportation and, if it is not moved, will be lost through rot. Military needs are increasing, and the WPB official said that there would be no let-up this year on military demands regardless of the direction or outcome of the war in Europe. This demand is due, he said, to cut more sharply into trucks and tries, as well as into the demand for rolling stock. Cars are extremely short in the East and South, and unusually bad weather throughout the Atlantic slope has not assisted matters.

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SUPERIOR PMC CHEMICALS

Acid Making In the Sulphite Pulp Industry

By A. H. LUNDBERG*

CHAPTER IV

(This is the next to last installment of Mr. Lundberg's articles which began in January 1943. In response to many inquiries, these articles will be published in book form as soon as paper is available).

While gas absorption has been practiced in one form or another since the earliest day of chemistry, there still remains much to be learned about the theory of gas absorption and the equipment most suitable for carrying out the operation. The following is based on our present information, which leaves much to be desired in respect to both theory and practice. Much of the data are from "Absorption and Extraction" by Thomas K. Sherwood, "Chemical Engineers' Handbook" by John H. Perry, and articles by Professor C. C. Furnas.

I. THEORY OF GAS ABSORPTION

Gas absorption, in the usual sense, involves transfer of gas from the gas phase into a liquid in which it is more or less soluble. The rate of transfer is pictured by Prof. Furnas (14) as follows:

"It has been quite definitely established that the rate of transfer of material to or from a gas is determined by the resistance of two films, one a very thin, inert layer of gas on one side of the gas-liquid interphase, and a corresponding inert layer of liquid on the other side of the interphase. A diagram of the hypothesized film condition for absorption is given in Fig. 32.

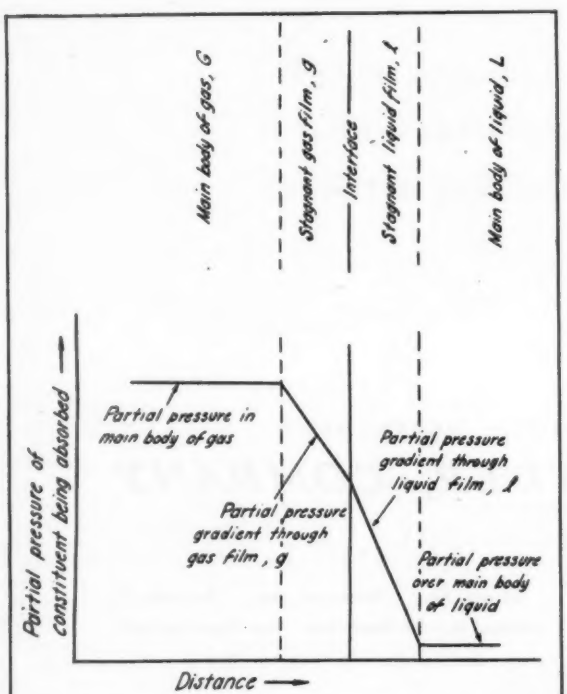
Main body of gas, G
Stagnant gas film, g
Interface
Stagnant liquid film, l
Main body of liquid, L
Partial pressure of constituent being absorbed
Partial pressure in main body of gas
Partial pressure gradient through gas film, g
Partial pressure gradient through liquid film, l
Partial pressure over main body of liquid
Distance

Figure 32: Film Conditions in Gas Absorptions

In this figure, the driving force for absorption is given as the partial pressure of the constitutent being absorbed from the gas. The pressure gradient of this constituent is pictured as occurring in both films.

For a given amount of turbulence in the gas stream and a given partial pressure gradient, the molecular rate of transfer through the gas film is of the same order of magnitude for a wide variety of chemical systems. On the other hand, the rate of transfer through the liquid film varies widely, dependent upon the gas solubility, the rate of any chemical reactions involved and the liquid viscosity. In some cases most of the resistance to transfer resides in the gas film, in other cases most of it is in the liquid film. Obviously since these resistances operate in series and since the resistance of the gas film is roughly constant for any system, the rate of transfer for a case where the liquid film resistance is the principal one will be much smaller than for a system where the gas film alone is important.

In the case of a very soluble gas such as ammonia being absorbed in water, the partial pressure gradient through the liquid film is generally considered to be negligible, that is, nearly all the resistance is in the gas film. But for the absorption of CO_2 in water or alkaline solution, the resistance is nearly all in the liquid film and the overall resistance to transfer is very much greater than for ammonia. This is true despite the fact that CO_2 is fairly soluble in water, the reason being that a relatively slow rate of chemical reaction slows down the rate in the liquid film.

For the case where most of the resistance is in the gas film (NH_3 in water) the rate of transfer is markedly increased by increasing the rate of gas flow but it is effected but little by increase of liquid rate. When the major resistance is in the liquid film (CO_2 in water), the rate of transfer is increased by increasing the liquid rate but it is practically unaffected by increase in gas rate."

In the case of a gas as sulphur dioxide which does not obey Henry's law of gas solubility over certain ranges of concentrations, the resistance of both gas and liquid films must be allowed for. That is typical where a chemical reaction takes place and the compounds formed are sufficiently unstable so that the dissolved gas exerts an appreciable vapor pressure.

II. GAS ABSORPTION EQUIPMENT

As mentioned in Chapter II, Paragraph VII-B, there is a variety of absorption equipment in use. The objective of each design, however, is the provision for intimate contact of gas and liquid over a large interphase surface, with a low cost and low operating costs. The various types may be divideded roughly into three

*Seattle, Washington. Mr. Lundberg is Western Manager, G. D. Jenssen Company, New York City.

Slime spots, breaks, blinded wires, plugged felts, dirty stock, clogged water lines, rotted felts . . . all *add* to the paper shortage, *subtract* from paper profits. With full paper production more imperative today than ever, this "shock treatment" for slime, fungi and bacteria control is highly recommended:

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groups: (a) packed towers, (b) bubble-cap or plate towers, and (c) miscellaneous types, including spray towers. It was also mentioned that the most common type of absorption equipment in a sulphite pulp mill is the packed tower.

The packed tower consists of a vertical shell set on an adequate foundation and filled with one of numerous types of inert packing material. The operation is usually counter-current, the solvent being distributed over the packing at the top of the tower and passing down over the packing in thin liquid films, while the gas passes up through the free space between the wetted particles of packing.

Despite the fact that packings have been used in a large number of places for a long time, there has been no standardization of packing materials; neither is there any unanimity of opinion as to which kinds are best.

Individual towers may be as high as 100 feet. It is advisable to have the diameter small compared to the packed height, as where the ratio of diameter to height is greater than one-fifth, special care must be taken to insure proper distribution of gas and liquor flow through the packing.

III. PACKING MATERIAL

A very large number of packing materials have been used or suggested for use in absorption towers. The earliest packings were lump materials such as coke or broken rock, screened to size. These materials are still used, but a number of manufactured packings on the market have found favor, particularly where acid-resistant materials are required.

The properties which a satisfactory tower packing should have are as follows (15):

1. Low Weight per Unit Volume

This affects not only the total weight to be carried by the tower but also the design of the tower shell itself as a packing that is dumped into the tower at random may exert a side thrust against the walls.

2. Large Surface per Unit Volume

This is desirable since, other things being equal, the rate of absorption is directly proportional to the surface exposed.

3. Large Free Cross Section

This is of importance as it affects the frictional drop through the tower and therefore the power that is required to circulate the gas. A small free cross section means a high velocity for a given through-put of gas, and above certain limiting velocities there is a tendency to blow the liquid out of the tower.

In addition to the above are the obvious requirements that the packing must be cheap, must have a reasonable mechanical strength, and must be chemically inert towards the materials to be handled.

From the absorption angle point of view, the most important item in a column performance is **the rate of transfer of material from the gas phase to the liquid or vice versa** as the absorptive capacity of a column depends on the equilibrium conditions of the chemical system and the rate of transfer between the phases.

The amount of material transferred from one phase to another in absorption or desorption is predicted by the equation

$$\frac{W}{\Theta} = k\,V\,\Delta Pm \qquad (1)$$

where $\frac{W}{\Theta}$ = lb. mols of material transferred from gas to liquid (or vice versa) in one hour.

k = coefficient of transfer measured as lb. mols absorbed (or desorbed) per hour per cubic foot of tower volume per atmosphere partial pressure difference between the main body of the gas and the liquid.

V = Volume of the packed tower in cubic feet.

ΔPm = Average or near partial pressure difference, in atmospheres, of the material being transferred, in the main body of the gas and liquid phases.

The evaluation of ΔPm involves a number of complications in many cases but it is usually expressible with sufficient accuracy by the logarithmic mean, i. e.

$$\Delta Pm = \frac{\Delta P_1 - \Delta P_2}{2.303 \log \frac{\Delta P_1}{\Delta P_2}} \qquad (2)$$

where ΔP_1 and ΔP_2 refer to the partial pressure difference between phases at opposite ends of the apparatus.

Prof. Furnas analyzes the above equations (1) and (2) as folows:

"A study of equations (1) and (2) shows that for a given set of terminal conditions (ΔP_1 and ΔP_2) in an apparatus of a given volume the amount of transfer of material between phases is measured by the mass transfer coefficient k. Thus, the efficiency of a given packing under given set of conditions may be said to be proportional to the magnitude of the transfer coefficient for that particular condition. The essence of relative efficiency of different packings then is found in a compilation of the transfer coefficients.

For a given system the magnitude of the transfer coefficient, k, is greatly affected by the degree of turbulence in the gas or the liquid stream or both, and turbulence is increased by increased velocity. Obviously, k should also be proportional to the area of contact between the moving gas and liquid, that is, by the amount of packing area which is wetted by an active moving film of liquid. Experience has shown that there is **often but little relation between size of the packing material and the wetted area.** Despite manufacturers' contention to the contrary, small-sized packing very frequently gives no higher absorption efficiency than large packing. This generalization can hardly be carried down to the very small-sized packings sometimes used in laboratory apparatus, but it certainly seems to be true for many of the packings of the size usually encountered in large columns. The principal factors in determining the efficiency of different packings seems to be shape and arrangement of the pieces, rather than size.

From the foregoing discussion it seems evident that a valid comparison between packings cannot be made unless the chemical system, and the gas and liquid velocities are the same. The effect of velocity for a system where the gas film controls can be taken care of by setting up a general relation between the size of the transfer coefficient and velocity. It has been found that in general the gas film transfer coefficient varies as the 0.8 power of the gas velocity. This can be expressed as

$$k = aG^{0.8} \qquad (3)$$

where k is the transfer coefficient.

G is the gas flow in lb. per hour per sq. ft.

a is a constant characteristic of the packing.

The quantity, a, then is a measure of the efficiency of the packing and it is inversely proportional to the height of a column which would be required for a given separation. A compilation of the values of a, from various sources, along with computed values of

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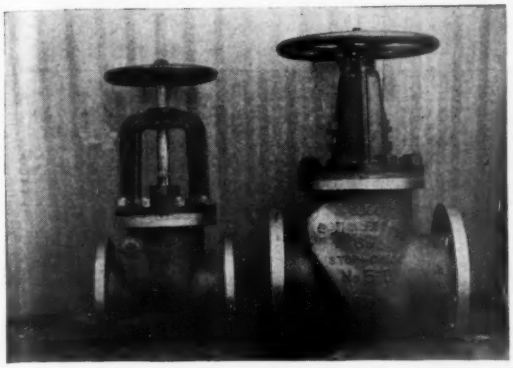
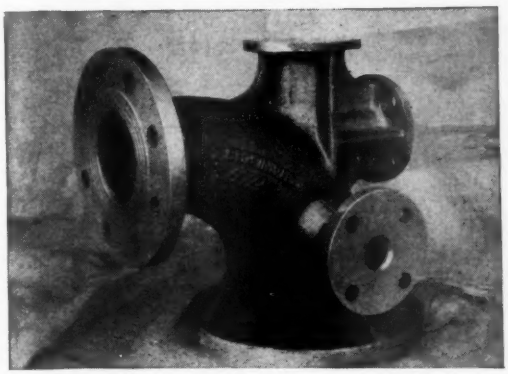


Screw Down Swing Check Valves



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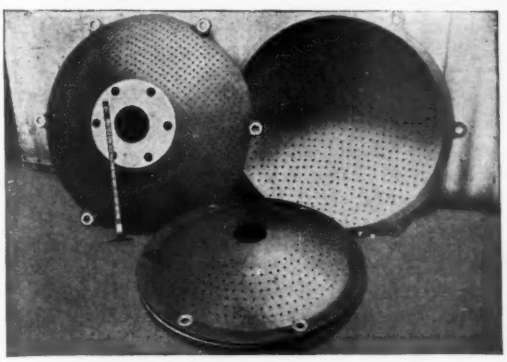

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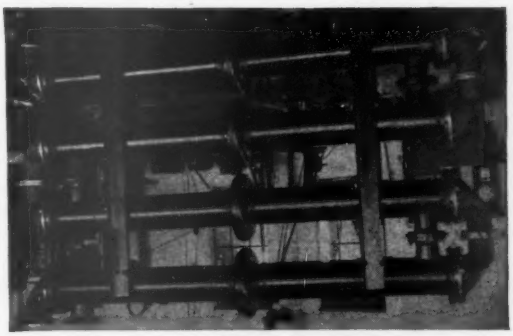

SO_2 Gas Coolers

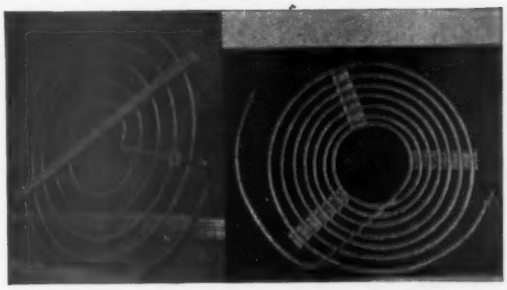

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TABLE XXVII

COMPARISON OF PACKINGS FOR GAS ABSORPTION WHEN GAS FILM IS CONTROLLING
(Data from various sources as compiled by T. K. Sherwood
in "Absorption and Extraction"
McGraw-Hill Book Co., 1937, p. 178)

	Solute	Solvent	Est. Surface area sq.ft./cu.ft.	Liq. Rate lb/hr/sq.ft	Value of a in $K = aG^{0.8}$	Relative Efficiency of Pack. %	Relative Hgt. for a given separation
0.25" x 0.4 in. glass rings	Benzene	Wash oil	-	163-408	0.046	80	1.25
0.5 to 0.75 in. coke	Benzene	Wash oil	-	500	0.057	100	1.0
0.73" glass balls	Benzene	Wash oil	-	75-573	0.034	59	1.70
0.35 to 0.63 in. coke	Ammonia	Water	-	323	0.083	100	1.00
0.25 in. crushed stone	Ammonia	Water	123	500	0.116	140	.71
0.50 in. crushed stone	Ammonia	Water	79	500	0.105	127	.79
0.75 in. crushed stone	Ammonia	Water	53	500	0.071	86	1.16
0.50 in. balls	Ammonia	Water	94	500	0.103	124	.81
0.75 in. balls	Ammonia	Water	64	500	0.058	70	1.43
1.0 in. balls	Ammonia	Water	55	500	0.057	69	1.45
1-1/4" to 1-3/4" broken quartz	Ammonia	Water	30	500	0.147	177	.56
3-in. spiral tile	Ammonia	Water	30	500	0.122	147	.68
4-in. partition ring	Ammonia	Water	22	500	0.135	163	.61
Wood grid, 3 in. x 1/2" spaced 1/2" apart	Ammonia	Water	32	500	0.122	147	.68
Wood grid 7" x 1" (1) spacing variable	Absorption H_2S	Sodium Carbonate Solution	9.5	1640	0.024		
Wood Grid 7" x 1" (1) spacing variable	(Stripping) H_2S	Sodium Carbonate Solution	6.3	1115	0.019		

(1) Data calculated from Furnas, C. C. Prof. Am. Gas Assn. 19, 721, (1937), plus some additional unpublished data.

relative efficiencies of the different packings and the relative heights of tower required for a given separation is given in **Table XXVII.**

Table XXVII has been divided in three parts, the absorption of benzene in wash oil, the absorption of ammonia in water, and the absorption of H_2S in sodium carbonate solutions. This division was made because the inherent resistance to transfer varies somewhat from one chemical system to another even though the resistance is almost entirely in the gas phase. It will be noted however, that the coefficients of transfer are of the same order of magnitude for the three systems when the packings are approximately the same.

TABLE XXVIII

RELATIVE EFFICIENCIES OF DIFFERENT PACKINGS
(Tabulated by Prof. C.C. Furnas)

Packing	Relative Efficiency %	Relative Ht. Column Req'd.
1-1/4" to 1-3/4" broken quartz	100	1.00
4-inch partition rings	92	1.09
Wood grid area 27.4 to 32 sq.ft./cu.ft.	83	1.21
3-inch spiral tile	83	1.21
0.25 inch crushed stone	79	1.27
0.50 inch crushed stone	72	1.39
0.50 inch balls	70	1.43
0.50 to 0.75 inch coke	57	1.75
0.35 to 0.63 inch coke	57	1.75
0.75 inch crushed stone	49	2.04
0.25 x 0.4 inch glass rings	46	2.18
3/8" Raschig Rings	46	2.18
0.75 inch balls	40	2.50
1.0 inch balls	39	2.57
1-inch Raschig Rings	30	3.33
1-inch Berl saddles	30	3.33
0.25 inch steel turnings	29	3.45
wood grid area 16 sq. ft./cu.ft.	28	3.58
wood grid area 9 to 12 sq.ft./cu.ft.	21	4.76
wood grid area 6.3 sq.ft./cu.ft.	19	5.26

It will aso be observed that there is but little relation between the surface area of the packing and the size of the transfer coefficient. As a matter of fact, the packing with the lowest surface area (the 4-inch partition ring) has almost the largest coefficient in the series.

This makes it appear that shape is of considerable more importance than size in the selection of a packing material.

The column in Table XXVII on "Relative height required for a given separation" is given as a measure which might be used in estimating the height of a column for a given separation for a given packing if data are already available on another packing. Computed data on the relative efficiency if the different packings with the relative height of column required for a given separation are given in **Table XXVIII.**

IV. LIQUOR DISTRIBUTION IN PACKED TOWERS

To get efficiency from any packed tower it is of importance that the packing surface is thoroughly wetted. It is, however, no guarantee that thorough wetting is obtained even when the liquor is flowing over the packing with a uniform distribution over the top tower cross section.

With packing particles large compared to the tower diameter, the liquor has a marked tendency to concentrate near the walls and for the center of the column to run nearly dry. With large ratios of tower diameter

to packing size, this tendency is negligible. It is the conclusion of several investigators that reasonable uniform liquor distribution is obtained with either regular or irregular solid packing materials, provided the ratio of tower diameter to packing size is greater than 8 to 1.

A certain liquor rate is necessary to assure perfect wetting. For wood grids Mr. Johnston (16) found 0.045 g.p.m. per foot of wetted grid perimeter sufficient to keep the surface wet at all times. Increasing the liquid flow above this figure he found had no effect on the absorption coefficient or the uniformity of distribution. Variations in gas velocity have little effect on liquor distribution in the packing except as the flooding point is approached.

In larger diameter towers multiple point liquor distribution is necessary. Otherwise, channeling might occur seriously affecting the efficiency of the tower unless the tower is very high. Baker, Chilton, and Vernon (17) gave liquor distribution special study and conclude that liquid distribution, even with a central liquid inlet, becomes substantially uniform when the liquid has descended 4 or 5 tower diameters, and, with a ratio of column diameter to particle diameter 8 to 1. Liquid distribution consisting of overflow weirs with V notches are desirable for columns of large diameters to obtain uniform liquid distribution at the top of the tower. Very high liquid rate, 1500 lbs. per hour per sq. ft., increases slightly the tendency for the liquid to channel to the outer sections of the column."

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British Columbia P. & P. Modernizes Mill Towns

● British Columbia Pulp & Paper Co., operating mills at Woodfibre and Port Alice and logging camp at Holberg, near the northern end of Vancouver Island, is now bringing to completion an extensive new housing program representing a substantial expenditure.

All the communities in which B. C. Pulp & Paper Co. operates have benefited from this program, designed to increase the contentment and convenience of the several hundred employes.

Especially at Holberg logging camp, loggers are separated from other settlements by a considerable distance. The company has made a special effort to make life as attractive as possible for 180 loggers and their families by improving living quarters and establishing recreation and entertainment facilities for movies, basketball, badminton, billiards, cards, etc. The whole community at Holberg has been remodelled since the company began to operate there on a large scale more than a year ago. Twenty-two bunkhouses there have been converted into single-room accommodation.

Visitors to Woodfibre who have not seen the pulp town in recent months will be agreeably surprised by the appearance of the community. The streets have been hard surfaced and boulevards planted in trees and shrubs.

New apartment buildings have been erected at Port Alice.

Upper View—Some of the new apartment buildings recently completed by B. C. Pulp & Paper Co., Port Alice, B. C. In the building to the left the lower floor has single rooms, while above are apartments.
Lower View (Left)—One of the attractive rooms now being occupied by single men.

Lower View (Right)—One of the community rooms provided for single men.

Bill Gardella Passes

● Oliver United Filters Inc. announced with regret the death of one of its oldest and most valued employees, William Gardella, at Springfield, Ohio, on Jan. 26. Mr. Gardella joined the company in 1916 and served for many years as sales development engineer.

His son, William Bert Gardella, is with the company in a sales engineering capacity.

F. P. Smith Drowned

● Frederick Peter Smith, production manager of the B. C. Pulp & Paper Co.'s sawmill at Port Alice, was drowned January 14 when he fell overboard from a steamboat southbound, during a storm. Mr. Smith was subject to heart attacks.

Murphy, Veteran Lockport Felt Co. Man, Dies

● Frank S. Murphy, of Appleton, Wis., sales representative for Lockport Felt Co. for 25 years, died of a heart attack Feb. 27.

Mr. Murphy leaves a widow and two sons. His sales territory was the Middle West area of the U. S.

To Revive Lightweight Newsprint Negotiations

● Discussion is to be resumed soon between a committee of United States publishers and representatives of the Canadian newsprint manufacturers on the possibility of producing and using 30-pound newsprint.

Publishers would like to have the increased 6⅔% more yards that 30-pound newsprint provides over the 32-pound. Many newspapers demonstrated the lighter paper could be used successfully on fast presses. If the Canadian wood situation improves to the point that 30-pound paper can be produced economically after June without reducing the overall production figure, many publishers would like to have more yardage even at higher cost.

Wood Inventories Are Dangerously Low

● An American Paper and Pulp Assn. survey shows serious declines in pulpwood inventories in the South, on the Pacific Coast and in the Appalachian region.

On the west coast, where invetnories are more important in keeping mills in operation, the decline was 14% in January. Ordinarily, inventories are not large in the South but a decline of 12½% was recorded after a sharp drop of 30% in December. Appalachian region mills' inventories droped about 15% in each month.

There were very slight increases in inventories in New England and the Lake States in January.

Mississippi Forestry Legislation May Be Model For Similar Action in Other States

THERE is much talk in the South of forestry legislation. Mississippi recently passed a new forestry law which our forestry editor, W. E. Crosby, suggests may be worthy of study by pulpwood producers and users in other parts of the country.

A number of legislatures in states in which pulpwood is an important resource are meeting this winter. Some of these legislatures are being urged to shape their own forestry policies rather than submit to federal regulation.

Southern pulp mill operators say that this Mississippi law is far-reaching and constructive. Operators who supported the measure in Mississippi predicted it would be the forerunner of similar state laws providing for forestry education, finer management and forest fire control.

Some Southern states have seed tree legislation but editors of this magazine were informed in the South that enforcement of such laws is difficult. It was thought that the new Mississippi bill has teeth in it.

Here follow provisions of the Mississippi law:

Senate Bill No. 1561

AN ACT PRESCRIBING THE MINIMUM CUTTING REQUIREMENTS OF TIMBER FOR COMMERCIAL PURPOSES AND THE MINIMUM WORKING REQUIREMENTS FOR NAVAL STORES PRODUCTS FOR COMMERCIAL PURPOSES AND PRESCRIBING THE PENALTY FOR ANY VIOLATION OF THE PROVISIONS OF THIS ACT.

Section 1. Be It Enacted by the Legislature of the State of Mississippi: That it is hereby recognized that only a small proportion of the privately-owned forest lands in the State of Mississippi is now managed in accordance with sound forestry practice; that there is waste, inefficiency and wanton destruction of the forest lands in the harvesting of forest products and the utilization of forest lands; that such conditions are resulting in serious economic and social loss and that it is hereby recognized that state regulation of harvesting of forest products and the utilization of forest lands in the state is essential to promote health, safety and general welfare of the people of the state. It is, therefore, declared to be the public policy of the State of Mississippi and the purposes of this act to encourage better management of forest lands; to preserve the tax base represented by forests and forest lands; to preserve and develop forest lands for the equal and guaranteed use for future generations; to preserve and protect the forest resources and the continuous growth of timber on lands suitable therefor; to insure an adequate supply of forest products at all times; to prevent soil erosion and consequent silting of stream channels and reservoirs; to protect watersheds and reservoirs and to insure at all times an adequate supply of water of the forest quality; to preserve and insure for all times adequate habitants for wild life; to preserve scenic beauty and to insure adequate facilities for outdoor recreation for public use; and to reduce forest fire hazards and encourage private ownership, economic management and scientific development of forest lands.

Section 2. This act shall be known as "The Forest Harvesting Act" and may be cited as such, and to effectively carry out the purposes of this act all agencies of the state whose duty it is to encourage and apply its laws, including any and all boards, commission bureaus and other bodies, shall make such interpretation and applications as will most nearly comply with the intent and purposes set forth in Section 1 hereof.

Section 3. No person, firm, partnership, association, or corporation shall work, contract to work, authorize, direct or assist in the working of new faces for naval stores purposes on trees less than ten (10) inches in diameter unless there is left unfaced or untapped on each acre of forest land being worked one hundred (100) or more well distributed trees four inches or more in diameter, or at least four (4) seed trees of ten inches or more in diameter.

Section 4. (a) No person, partnership, firm, association or corporation shall cut, authorize, direct or assist in the cutting for commercial purposes any pine trees unless there is left standing on each acre of forest land being harvested at least four pine seed trees of ten inches or more in diameter, except as hereinafter provided.

(b) No person, partnership, firm, association, or corporation shall cut, contract to cut, authorize, direct or assist in the cutting for commercial purposes any pine trees under ten (10) inches in diameter unless there is left standing on each acre of forest land being harvested, one hundred (100) or more well distributed pine trees four inches or more in diameter or at least four pine seed trees of ten inches or more in diameter. Provided, however, that an operation may submit to the enforcing agency an acceptable plan of management which will assure continued productivity of the area to be harvested in lieu of the above provisions.

Section 5. (a) No person, partnership, firm, association, or corporation shall cut, contract to cut, authorize,

BANNAN BROTHERS around the table to talk about Western and Pacific Gear Works enterprises.

Left to right: BERCHMAN, Vice President; THOMAS J., recently elected President; PHILIP, Treasurer, and CHARLES, Secretary.

Thomas J. Bannan New Western Gear President

● Thomas J. Bannan of Seattle has been elected president of Western Gear Works, with plants in Seattle, Lynwood and Los Angeles, Calif., of its associate company, Pacific Gear and Tool Works of San Francisco.

Mr. Bannan has been executive vice president of the companies for a number of years. He succeeds his father, P. L. Bannan, Sr., who died last October. The related companies, with a history of 50 years in the industry, are among the largest of their kind. Products are used in basic industries of the West and, since Pearl Harbor, in practically every phase of operation of the Army and Navy. Mr. Bannan also is president of the Webster-Brinkley Co., and the Hallidie Machinery Company of Seattle.

The Seattle Western Gear plant recently won a fourth renewal of its Army-Navy "E" Award.

STANDARD ENGINEERS NOTEBOOK

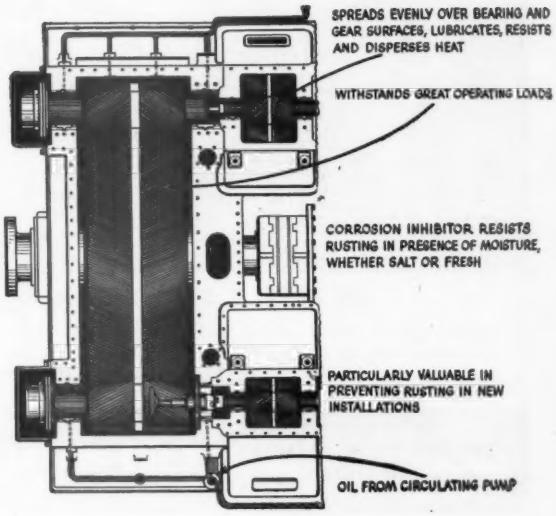
VOL 2-W No. 3

Compounded turbine oil stops rust damage

When rusting is a problem in double reduction steam turbines, either because of sweating or leakage of fresh or salt water, Calol Deturbo Oil 19X is recommended. It eliminates the usual danger of rusting in new installations when first charged, and gives full protection throughout their lives.

Calol Deturbo Oil 19X is a compounded oil, made from selected crudes. It contains a highly effective rust inhibitor. In official tests, steel strips immersed in mixtures of Calol Deturbo Oil 19X and both fresh water and synthetic sea water showed no sign of rusting after 48 hours.

Because of its high film strength, Calol Deturbo Oil 19X carries the heavy weight imposed on turbine bearings, prevents wear and consequent rotor misalignment. It separates rapidly from water with a minimum of sludge formation, and is non-corrosive. Calol Deturbo Oil 19X fully meets U. S. Navy specification for 2190-T turbine oil.


SPREADS EVENLY OVER BEARING AND GEAR SURFACES, LUBRICATES, RESISTS AND DISPERSES HEAT
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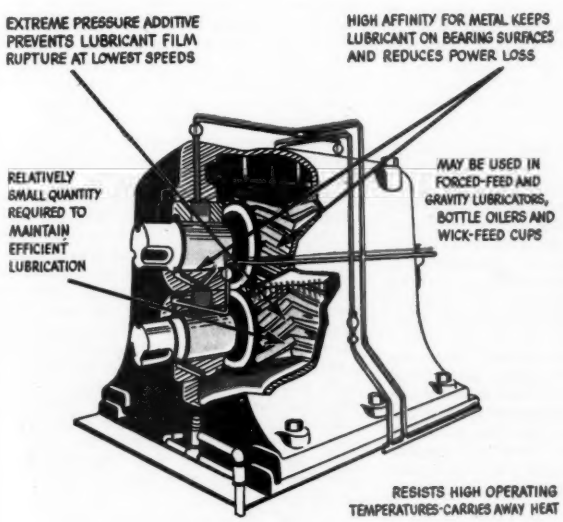
PARTICULARLY VALUABLE IN PREVENTING RUSTING IN NEW INSTALLATIONS
OIL FROM CIRCULATING PUMP

Vistac gives gears extra protection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They assure full protection to heavy duty gears, such as industrial reduction sets, on which extreme pressures are exerted over wide areas for a relatively long time. They are extremely efficient. Adequate quantities may be supplied to gears by the usual lubrication methods—forced feed- and gravity-lubricators and sight-feed cups; the lighter grades by bottle-oilers and wick-feed cups.

Calol Vistac Oils are also outstanding for the lubrication of rock drills, hammers and other air tools. They atomize quickly, are stable and uniform, and retain their fluidity at low temperatures. They are made in six grades: 9X (SAE 10), 14X (SAE 20), 19X (SAE 30), 28X (SAE 40), 36X (SAE 40), 45X (SAE 40).

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direct or assist in the cutting for commercial purposes any hardwood trees unless there is left standing on each acre of forest land being harvested at least six hardwood trees of ten inches or more in diameter of the commercial species being harvested, except as hereinafter provided.

(b) No person, partnership, firm, association, or corporation shall cut, contract to cut, authorize, direct or assist in the cutting for commercial purposes any hardwood trees unless there is left standing on each acre of forest land being harvested at least six hardwood trees of ten inches or more in diameter of the commercial species being harvester except as hereinafter provided.

(b) No person, partnership, firm, association, or corporation shall cut, contract to cut, authorize, direct, or assist in the cutting for commercial purposes any hardwood trees under eight inches in diameter unless there is left standing on each acre of forest land being harvested one hundred (100) or more well distributed hardwood trees of four inches or more in diameter or at least six hardwood seed trees of ten inches or more in diameter of the commercial species being harvested.

Section 6. Where timber is to be harvested for commercial purposes on forest lands containing a mixed stand of pine and hardwood timber, no person, partnership, firm, association, or corporation shall cut, contract to cut, authorize, direct or assist in cutting of any timber from such lands unless there is left standing on each acre of land at least four pine trees of ten inches or more in diameter of the commercial species being harvested along with at least two hardwood seed trees of ten inches or more in diameter of the commercial species which is being harvested. In the event that pine trees predominate in such mixed stands, and it is desired that pine trees less than eight inches in diameter are to be harvested, Section 4 shall rule. On lands classified as mixed stands of pine and hardwood there shall be no limitations on the amount or size of the hardwood trees harvested.

Section 7. All trees left for seed trees in compliance with the provisions of this act shall be thrifty trees of desirable species with well formed crowns, uninjured from tapping, cutting or logging operations and as well distributed over the acre as may be possible. No seed tree left standing subsequent to the provisions of this act shall be cut except for clearing land for actual cultivation until other trees of the same species and in sufficient numbers as required by this act for seed trees have grown to be of eight inches or more in diameter. For the purpose of this act tree diameter measurements shall be taken outside of the bark and twelve inches above the ground for pine trees, and above the swell for hardwood trees.

Section 8. This act shall not apply to nor shall it prohibit the clearing of land for bona fide use in crop production, nor the clearing of land for pasture purposes where such pasture is enclosed with a standard wire fence of two or more strands, nor to the clearing for building sites, right-of-ways for roads, power or communication lines or similar uses; nor shall the provisions of this act apply to individuals cutting timber from their own lands for their own personal use where there is no sale, commercial gain or profit involved, nor those special cases where permission is obtained in writing from the proper state forestry authorities for the emergency removal of storm or diseased or damaged timber or for proper silvicultural operations.

Section 9. It shall be the duty of the Mississippi Forestry Commission and its employees to enforce the terms and provisions of this act and to that end said Commission or its employees are hereby authorized to enter upon any and all forestry lands to make such inspection and investigations as may be necessary for the proper enforcement of this act and, in addition to the other remedies, conferred by this act or other laws of the State Forestry Commission is hereby authorized to enter suit on behalf of the state to enjoin any person, partnership, firm, association, or corporation from violating any of the terms and provisions of this act and in such suits the commission shall not be required to give bond, and the said commission is also authorized to employ inspectors and such other help as may be necessary for the effective carrying out of the intent and purposes of this act.

Section 10. In order to more adequately enforce the provisions of this act, it is hereby made the duty of each sheriff, constable, game warden, district attorney and county prosecuting attorney to make from time to time inquiry as to any violation of this act and to promptly report any violation to the State Forestry Commission and further to assist the Commission, its

officers and employees in enforcing any of the provisions of this act and in prosecuting any violations thereof. It shall be the duty of the various circuit judges at each convening of the grand jury to call the grand jurors' attention to this act and to charge them to fully investigate any violations hereof.

Section 11. The unit for checking compliance is here defined as 40 acres or fraction thereof being harvested or worked and any person, partnership, firm, association, or corporation who violates any of the terms, or provisions of this act shall be guilty of a misdemeanor and upon conviction thereof, shall be fined not less than $25.00 and not more than $50.00 for each separate offense; and the working or harvesting of a unit of 40 acres or fraction thereof of forest lands on which 10% or more of the area worked or harvested in violation of this act shall constitute a separate offense hereunder.

Section 12. The provisions of this act shall not apply to nor affect any valid timber cutting contract made and entered into prior to the approval of this act.

Section 13. It shall be the duty of the State Forestry Commission within 60 days after the passage of this act to give it general publicity throughout the state and post notices covering the entire act in at least three public places in each county, one of which shall be posted on the bulletin board at the front door of the courthouse in each of the counties. No penalty shall be imposed because of any violation of the provisions of this act as set forth in Section 10 hereof until three months from the date of the passage of this act.

Section 14. If any clause, sentence, paragraph, subdivision, section or other part of this act be adjudged by any court of competent jurisdiction to be unconstitutional or unsound such judgment or decree shall not affect, impair or invalidate the remainder thereof but shall be confined to such clause, sentence, paragraph subdivision, section or part thereof particularly involved in the controversy in which such judgment shall have been rendered.

Section 15. That this act shall take effect and be in force from and after its passage.

House Bill No. 459

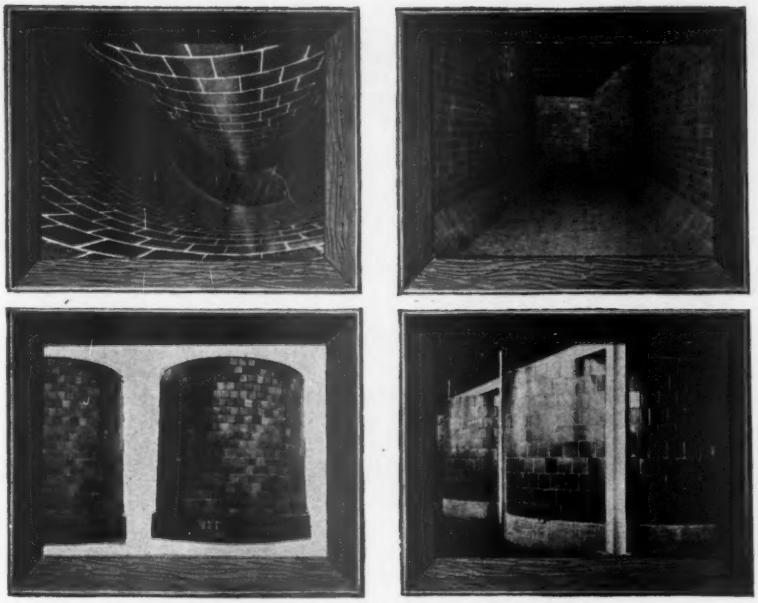
AN ACT CREATING A STATE-WIDE FORESTRY EDUCATION TIMBER MANAGEMENT, AND FOREST FIRE CONTROL PROGRAM, AND AUTHORIZING EXPENDITURES OF FUNDS TO ACCOMPLISH THE PURPOSES OF SAID ACT.

Section 1. Be It Enacted by the Legislature of the State of Mississippi, That for the purpose of providing assistance to all farm woodland and timber landowners in the state, including private ownership, and to promote the growing, managing and harvesting of timber thereon, and to provide organized forest fire protection in all counties levying a tax therefor, and to provide for the supervision and organization of volunteer fire prevention and control in all counties not levying a forest acreage tax, and to encourage the production and growth of timber on all lands suitable therefor, and for the better management thereof, and to encourage greater private ownership and promote forest education and timber management and forest fire control, the State Forestry Commission is hereby authorized to carry out the provisions of this act.

Section 2. The State Forestry Commission be, and it is hereby authorized to expend out of state appropriate funds not more than three cents (3c) per acre in each year on the 5,578,000 acres now under organized forest fire protection for the purpose of giving financial and advisory assistance to such counties as are now levying the forest acreage tax.

The said commission is further authorized to accept and place under organized forest fire control not to exceed 4,000,000 acres during the biennium July 1, 1944, to June 30, 1946, and an equal amount of 4,000,000 acres in each biennium thereafter except where failure to accept a larger area would result in loss to the state of federal funds, supplies, and equipment, in which case the commission would be authorized to accept and place under intensive fire control more than 4,000,000 acres in any biennium. The commission is further authorized to expend out of state appropriated funds not to exceed three cents (3c) per acre per year on such additional acres as are approved by the commission for organized forest fire control, timber management, and forest education, providing that the counties or beats in which such lands lie shall have levied the forest acreage taxes provided in Section 4.

In those counties, not levying a forest acreage tax, the said commission



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is authorized to expend from state appropriated funds such amounts as are available not to exceed three cents (3c) per acre per year in providing financial and supervisory assistance in forest education, timber management, and supervision in organizing volunteer forest fire control.

Section 3. That in order to carry out further the program herein authorized the State Forestry Commission be and it is hereby authorized to organize, divide, or set up forestry districts throughout the state, which districts shall be organized, divided or set up as to best serve the interest of the state as a whole. In such districts there shall be created forest areas and each area shall consist of not less than 500,000 acres of timbered and uncultivatable lands. The commission shall appoint a district forester or forest ranger for each district and shall appoint an area forester or forest ranger for each forest area, all of whom shall be charged with the duty of directing forestry education, timber management, forest fire control and other necessary forestry conservation activities and practices as the commission shall deem necessary.

Section 4. That the board of supervisors of any county desiring to receive the financial and supervisory cooperation of the State Forestry Commission in carrying out organized forest fire control and other provisions of this act, is hereby authorized to levy a special tax to be known as the forest acreage tax. Such tax shall not be less than one cent (1c) per acre and not more than two cents (2c) per acre on all timbered and uncultivatable land in the county, and the forest acreage tax when so levied by the board shall not be removed for a term of five years after the first levy is made. If a majority of the freeholders in any county or beat thereof shall petition the board of supervisors therefor, it shall be the duty of the board of supervisors to levy, assess and collect such tax and the same shall remain a tax for five years thereafter, and at the end of any five-year period the tax may be discontinued by a petition signed by a majority of the freeholders of the county or beat thereof so requesting or petitioning.

Section 5. That all forest acreage taxes assessed and collected by such levy shall be remitted to the state treasurer and placed in a special fund set up for each county, or beat thereof, coming under the terms of this act, and such funds shall be expended by the Forestry Commission therein for forestry education, timber management, organized forest fire control and other forestry conservation activities or practices, as the commission may deem necessary in carrying out the purposes and intent of this act.

Section 6. The State Forestry Commission is hereby authorized to use state funds appropriated for the purposes of this act in addition to any funds made available from county forest acreage taxes, federal and other sources. The commission shall not extend organized forest fire control in any one fiscal year to more than 2,000,000 acres except as provided in Section 2.

Section 7. That the State Forestry Commission be, and it is hereby authorized to expend the funds herein

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provided in such a manner as to most effectively carry out the provisions of this act on an economical and practical basis in order to foster, encourage, promote, and bring about forestry education, timber management, and organized forest fire control throughout the State of Mississippi.

WANTED: Paper mill chemist for middle west combined paperboard mill, carton and container plant; laboratory research and development. Address Box 3, care Pulp and Paper Industry, 71 Columbia St., Seattle 4, Wash.

Retires From Forest Service

● Earle H. Clapp, 67-year-old associate chief of the U. S. Forest Service, has retired from active duty after 40 years of government service. He lives at 6802 Meadow Lane, Chevy Chase, Md.

Mr. Clapp was called a "crusader" for forest conservation by Lyle F. Watts, present Forest Service chief.

POSITION WANTED — Paper Mill Supt. wishes to move to West Coast. Twenty-five years' experience on book, bond, news, writing, tissue and board. Expert on color. Take full charge of mill, Fourdrinier or Cylinder. Write P. O. Box 432, St. Cloud, Minn.

Circulation of U. S. Newspapers Set Record

● U. S. newspapers, while taking large size deductions in their paper supply, were at the same time breaking all past circulation records in 1944.

The annual Editor & Publisher survey, shows an overall increase of 3.3% for morning and evening papers last year over 1943. Sunday papers increased their circulation by .98%. Morning and evening dailies totaled 28,565,387 circulation last Sept. 30—145 evening papers had 14,666,838 and 104 morning papers had 13,898,549. Sunday papers, 143 of them, had 30,582,039.

SALES MANAGER—Well established manufacturer needs a man thoroughly experienced in sales and engineering. Prefer a graduate engineer. Should have a wide acquaintance in the paper and pulp industry. Knowledge of paper mill machinery desirable, but not absolutely necessary. Should be energetic, reliable and with a record that will bear investigation. Young enough to have ambitions for future, but old enough to have experience and acquaintanceship in the industry. To such a man a real opportunity awaits. Will develop into full sales manager position for right man. Write complete details in first letter, salary expected, draft status, etc. Strictly confidential. Box 2, Pulp & Paper Industry, 71 Columbia St., Seattle 4, Wash.

A neighborhood firm
exporting Northwest pulp and paper

AGNER & FREDRICKSON CO.
Colman Bldg. Seattle 4

Established in Seattle since 1925

Pulp Testers For 1945

● Pulp and paper mill laboratories (and directors), as approved by the Certified Pulp Testers' Bureau as of March 1:

Harry C. Bradford, Rex Paper Co., Kalamazoo, Mich.; Clarence T. Clark, Restigouche Co., Ltd., Campbellton, N. B.; C. M. Connor, Glassine Paper Co., West Conshohocken, Pa.; N. W. Coster, Soundview Pulp Co., Everett, Wash.; Clarence A. Enghouse, Crown Willamette Paper Co., West Linn, Ore.; G. H. Galaway, Crown Willamette Paper Co., Camas, Wash.; Nelson Hartnagel, Fibreboard Products, Inc., Port Angeles, Wash.; Victor R. Johnson, St. Marys Kraft Corp., St. Marys, Ga.;

Franklin Jones, St. Joe Paper Co., Port St. Joe, Fla.; K. C. Logan, Pacific Mills, Ltd., Ocean Falls, B. C.; L. W. Parent, Port Rayol Pulp & Paper Co., Ltd., Fairville, St. John, N. B.; Joseph Quinn, Castleton-on-Hudson, N. Y.; R. H. Stevens, National Container Corp., Jacksonville, Fa.; G. R. Tennent, Hummel-Ross Fibre Corp., Hopewell, Va.; F. J. Weleber, Hawley Pulp & Paper Co., Oregon City, Ore.; H. R. Wheeler, Jr., Oswego Falls Corp., Fulton, N. Y., and Edward P. Wood, Hollingsworth & Whitney Co., Mobile, Aala.

Aslin Moves to Seattle

● Keith Aslin, who has been in charge of sales in the Portland, Ore., office of Crown Zellerbach Corp., has been transferred to the White Building offices in Seattle where he will be in charge of fruit warp sales, a field which has become increasingly important.

In the Pacific Northwest Distributed from: 322 Occidental Avenue, Seattle 4, Washington.
784-B 1010 "A" Street, Tacoma, Washington. • 400 S. W. First Ave., Portland 4, Oregon.

Members of Central States Stream Committee

● Last month we announced election of E. F. Bearce of the Chillicothe Paper Co., as chairman of the Central States committee for the National Stream Improvement Council.

The meeting took much the same pattern of organization as has been related in PULP & PAPER INDUSTRY coverage of other recent regional meetings of the Council. The following were appointed to serve on the committee for the Central Region:

Harold C. Koch, Auglaize Box Board Co.; Edward Lum, Beckett Paper Co.; J. W. Roberts, Philip Carey Mfg. Co.; H. T. Randall, Champion Paper and Fibre Co.; E. F. Bearce, Chillicothe Paper Co.; G. A. Zinkel, Container Corp. of America; H. H. Harrison, Crystal Tissue Co.; R. P. Getty, Fort Wayne Corrugated Paper Co.; R. W. Martindale, Fox Paper Co.; S. F. Whitesel, Franklin Board and Paper Co.; Harry C. Fisher, Gardner-Richardson Co.; P. S. Cade, Harding-Jones Co.; D. L. Owen, Hinde and Dauch Paper Co.; C. S. Hamm, Mead Corp.; John Traquair, Mead Corp.; Herbert A. Brawn, Miamisburg Paper Co.; H. Paul Petzsold, Oxford Miami Paper Co.; R. B. Roe, Sorg Paper Co.; B. E. Welty, United States Gypsum Co.; Harry E. Clayton, West Carrollton Parchment Co., and Carl D. Ross, Wrenn Paper Co.

Herb's Stepson Dies

● Gordon Graham, stepson of J. J. Herb, president of the Pacific Coast Paper Mills in Bellingham and New Westminster, died in a Naval Air Force plane crash in the Cascade Mountains, Skagit County, Wash. Memorial Services were held at Whidby Island Air Base for those who lost their lives. Mr. Graham was serving as machinists mate.

Silver Bar for Lt. Colton

● It's a silver bar now for Lt. Edgar L. Colton, son of L. A. Colton, vice president of the Zellerbach Paper Co., San Francisco. Edgar is in Belgium attached to the Medical Administration Corps.

Arthur Colton Resigns

● Arthur H. Colton, for 16 years northern California representative of the Western Paper Converting Co., Salem, Ore., has resigned that position. He has not announced his plans for the future.

J. O. Ross, V.-P., In West

● A. E. Montgomery, vice president and western manager of J. O. Ross Engineering Corp., made his first trip to Pacific Coast mills since before the war during early February. Mr. Montgomery's Chicago office is at 201 No. Wells St.

Wuenschel On Visit

● J. F. Wuenschel, Pacific Caost sales manager of the Hammermill Paper Co., accompannied by Mrs. Wuenschel, stopped off in San Francisco, on his way home from the mill at Erie, Pa.

Direct Mail Exhibit

● Sponsored by the Zellerbach Paper Co. was the showing of fifty direct mail leaders at the Palace Hotel, San Francisco, March 7. The 50 examples of outstanding mail campaigns were chosen from all over the United States.